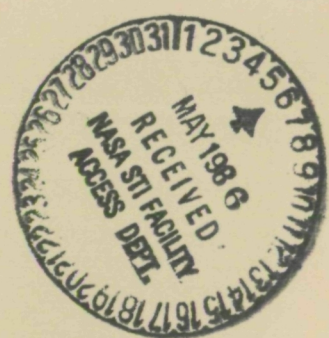




(NASA-CR-178809) A DATA BASE AND ANALYSIS  
PROGRAM FOR SHUTTLE MAIN ENGINE DYNAMIC  
PRESSURE MEASUREMENTS. APPENDIX B: DATA  
BASE PLOTS FOR SSME TESTS 901-290 THROUGH  
901-414 Final Report (Wyle Labs., Inc.)

N86-23635  
Unclas  
G3/20 06053



# research REPORT

WYLE LABORATORIES - RESEARCH STAFF  
TECHNICAL REPORT 66338-01

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

DATA BASE PLOTS FOR SSME TESTS  
901-290 through 901-414

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 A1

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
290 ↓	MMC HOT GAS IN PR ↓	40,000 ↓	25
			55
			75
			195
			315
			435
			500
			500
			10
			200
293 ↓	HPOP DS PR ↓	20,000 ↓	400
			600
			800
			10
			200
			400
			600
			800
			10
			200
294 ↓	OPB PC PR DC ↓	20,000 ↓	400
			600
			800
			10
			200
			400
			600
			800
			10
			200
293 ↓	HPOP DS PR ↓	20,000 ↓	40
			100
			300
			500
			645
			660
			10
			40
			100
			300
294 ↓	PBP DS PR ↓	20,000 ↓	500
			645
			660
			10
			40
			100
			300
			500
			645
			660
294 ↓	OPB PL ↓	20,000 ↓	10
			40
			100
			300
			500
			645
			660
			10
			40
			100



DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
301	HPOP DS PR	20,000	100
	↓		250
	↓		400
	PBP DS PR		100
↓	250		
↓	400		
OPB PC PR DC	100		
↓	250		
↓	400		
303	HPOP DS PR		5
↓	30		
↓	45		
↓	5		
↓	30		
↓	45		
↓	5		
↓	30		
↓	45		
↓	5		
↓	30		
↓	45		
304	HPOP DS PR	5	
↓	50		
↓	75		
↓	5		
↓	50		
↓	75		
↓	5		
↓	50		
↓	75		
FPB FUEL MAN PR	5		
↓	50		
↓	75		
↓	5		
↓	50		
↓	75		
↓	5		
↓	50		
↓	75		
↓	5		
↓	50		
↓	75		
305	HPOP DS PR	5	
↓	25		
↓	50		
↓	75		

DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
305	PBP DS PR	20,000	5
	↓		25
	↓		50
	↓		75
	FPB FUEL MAN PR		5
	↓		25
	↓		50
	↓		75
	HPOP IN PR		5
	↓		25
↓	50		
↓	75		
HI LX I PR	5		
↓	25		
↓	50		
↓	75		
306	HPOP DS PR	5	
↓	6		
↓	35		
↓	70		
MCC HOT GAS IN PR	40,000	5	
↓	20		
↓	50		
↓	75		
PBP DS PR	20,000	5	
↓	35		
↓	70		
FPB FUEL MAN PR	5		
↓	20		
↓	50		
↓	75		
HPOP IN PR	5		
↓	20		
↓	50		
↓	75		
HI LX I PR	5		
↓	20		
↓	50		
↓	75		
307	HPOP DS PR	5	
↓	20		
↓	45		
↓	70		





DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
311	HPOP IN PR	20,000	6
	HI LX I PR		30
312	MCC HOT GAS IN PR	20,000	6
	HPOP IN PR		40
313	HI LX I PR	20,000	6
	MCC HOT GAS IN PR		4
314	HPOP IN PR	20,000	4
	HI LX I PR		30
315	HPOP DS PR	20,000	6
	MCC HOT GAS IN PR		30
316	PBP DS PR	20,000	6
	HPOP IN PR		30
317	HI LX I PR	20,000	6
	HPOP DS PR		4
317	MCC HOT GAS IN PR	20,000	30
	PBP DS PR		60
317	HPOP DS PR	20,000	4
	MCC HOT GAS IN PR		11
317	PBP DS PR	20,000	4
	OPB PC PR DC		11
317	HPOP DS PR	20,000	4
			11

DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
317	MCC HOT GAS IN PR	20,000	4
			11
		40,000	4
			11
	PBP DS PR	20,000	4
			11
	OPB PC PR DC		4
			11
			6
			30
319	HPOP DS PR		92
			6
	MCC HOT GAS IN PR		30
			92
			6
			30
	PBP DS PR		92
			6
			30
			92
321	MCC IN PR	40,000	12
			60
			180
	OPB PC PR DC	20,000	6
			30
			92
	MCC HOT GAS IN PR		6
			30
			90
			100
		270	
	40,000	6	
		30	
		90	
		100	
		270	
	20,000	6	
		30	
		90	
		100	
		270	
	FPB PC		6
			30
			90
			100
			270
	OPB PC PR DC		6
			30
			90
			100
			270

DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
322	HPOP DS PR	20,000	6
			130
			170
			190
			210
			230
			260
			280
	MCC HOT GAS IN PR		6
			130
			150
			170
			190
			210
			230
			260
			280
	PBP DS PR		6
			130
			150
	170		
	190		
	210		
	230		
	264		
	284		
FPB PC	6		
	130		
	150		
	170		
	190		
	210		
	230		
	260		
	280		
OPB PC PR DC	6		
	130		
	150		
	170		
	190		
	210		
	230		
	260		
	280		

DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
384	THRUST		
385			
388			
389			
390			
391			
393			
394			
395			
397			
398			
400			
401			
402			
403			
404			
	HPOP BAL CAV PR2	20,000	20
			100
			220
	HPOP BAL CAV PR1		20
			100
			220
	OPB PC PR		20
			100
			220
	HPFP BAL CAV PR		20
			100
			220
	FPB PC		20
			100
			220
405	THRUST		
406			
407			
	HPOP BAL CAV PR2	20,000	20
			45
			75
			200
			400
			430
	HPOP BAL CAV PR1		20
			45
			75
			200
			400
			430

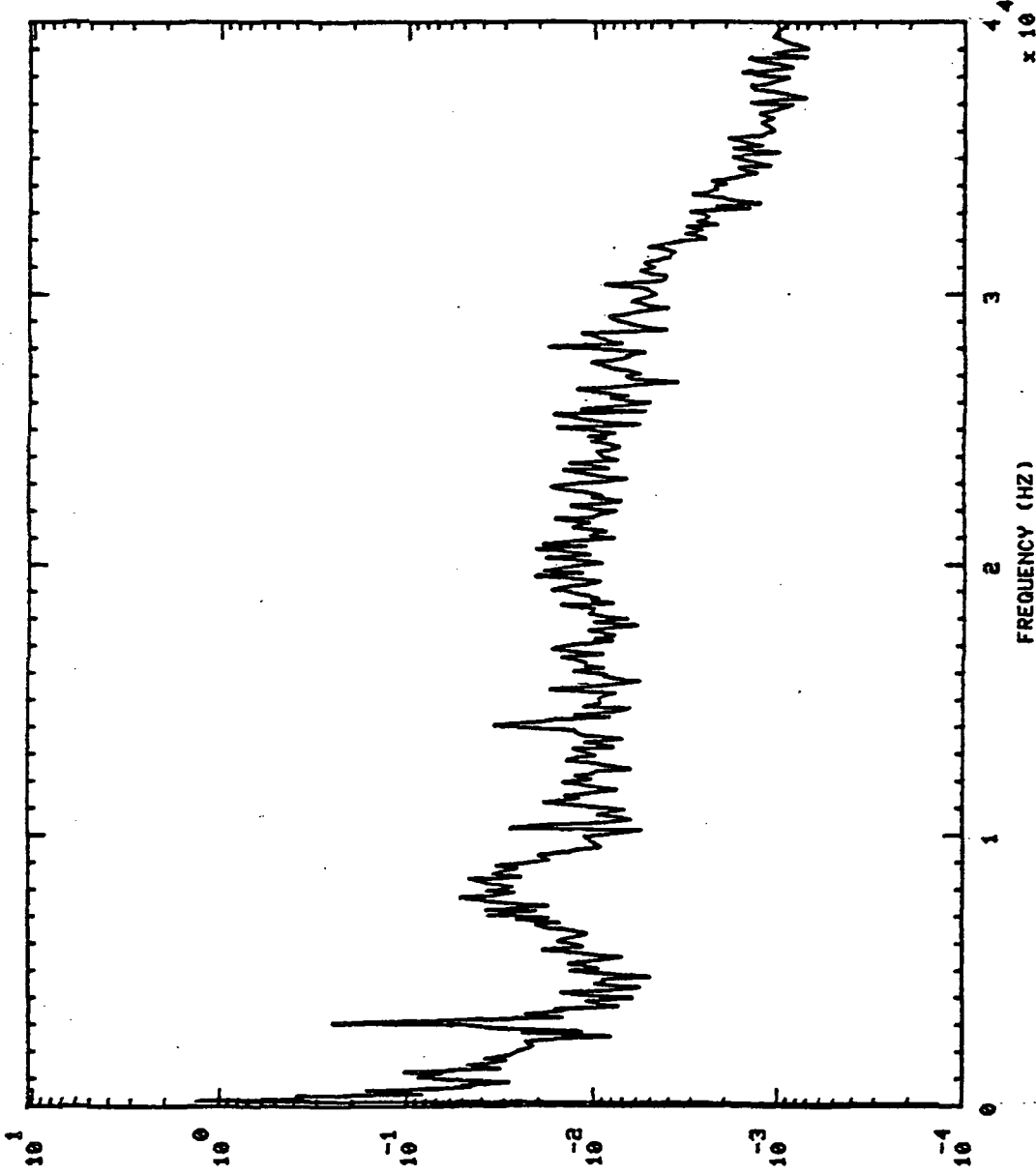
DATA PLOT LISTING FOR TEST STAND A1 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
407	FPB PC	20,000	20
			45
			75
			200
			400
			430
	OPB PC PR		20
			45
			75
			200
			400
			430
			20
408 409	HPFP BAL CAV PR	20,000	45
			75
			200
			400
			430
	THRUST		15
	HPOP BAL CAV PR2		240
			500
			525
			705
			725
	HPOP BAL CAV PR1		15
			240
	500		
	525		
	705		
	725		
OPB PC PR	15		
	240		
	500		
	525		
	705		
	725		
HPFP BAL CAV PR	15		
	240		
	500		
	525		
	705		
	725		

DATA PLOT LISTING FOR TEST STAND A1 (Concluded)

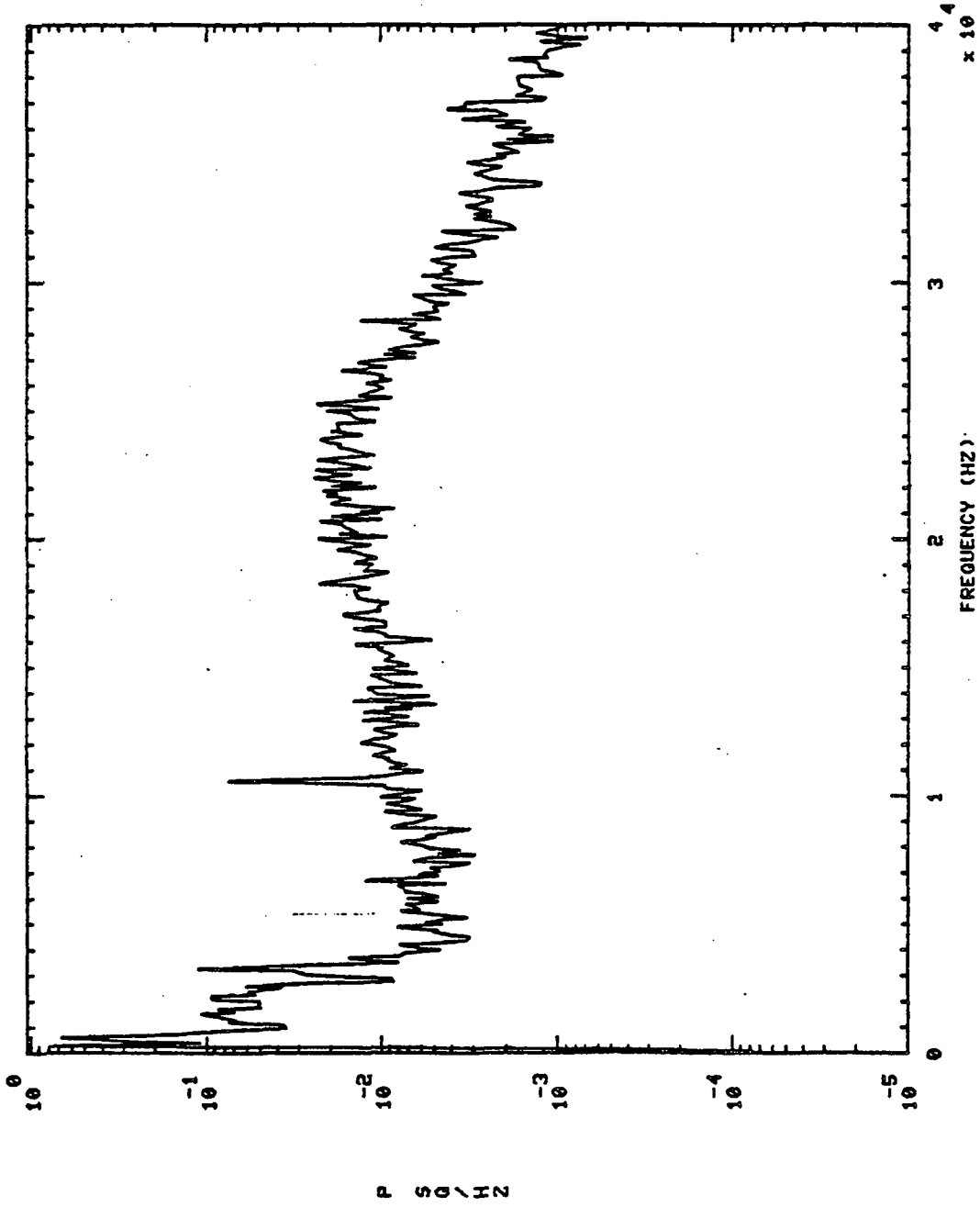
<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
409	FPB PC	20,000	7
↓	↓	↓	240
410	THRUST		500
413	↓		525
414	↓		705
			725

901290 MCC HOT GAS IN PR S+ 25.01H0,'S



P S0 / HZ

901290 MCC HOT GAS IN PR S+ 55.0140,'S

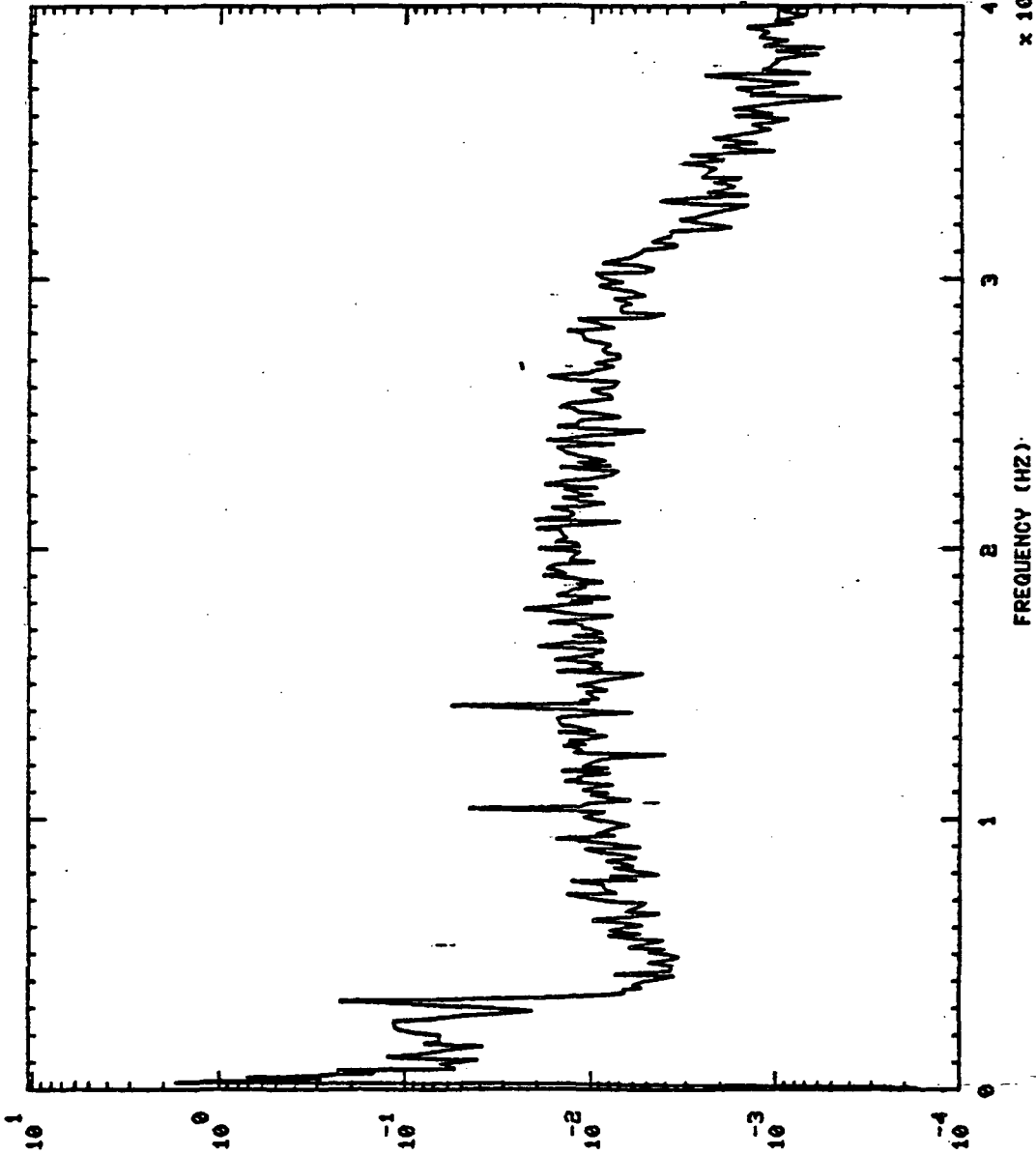




901290 MCC HOT GAS IN PR S+ 75.01H0,'S

MCC HOT GAS IN PR

901290

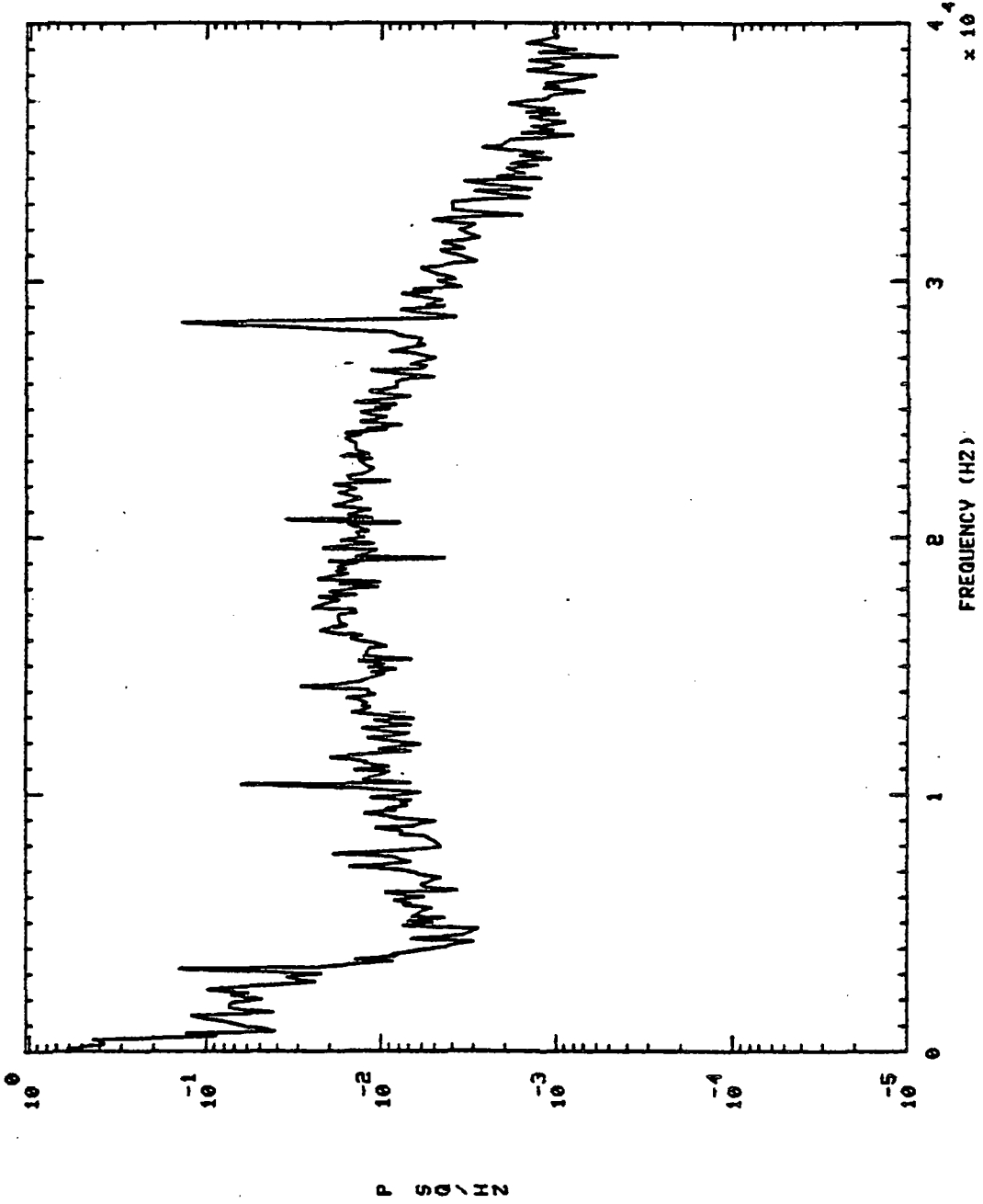


P S D / H Z

FREQUENCY (HZ)

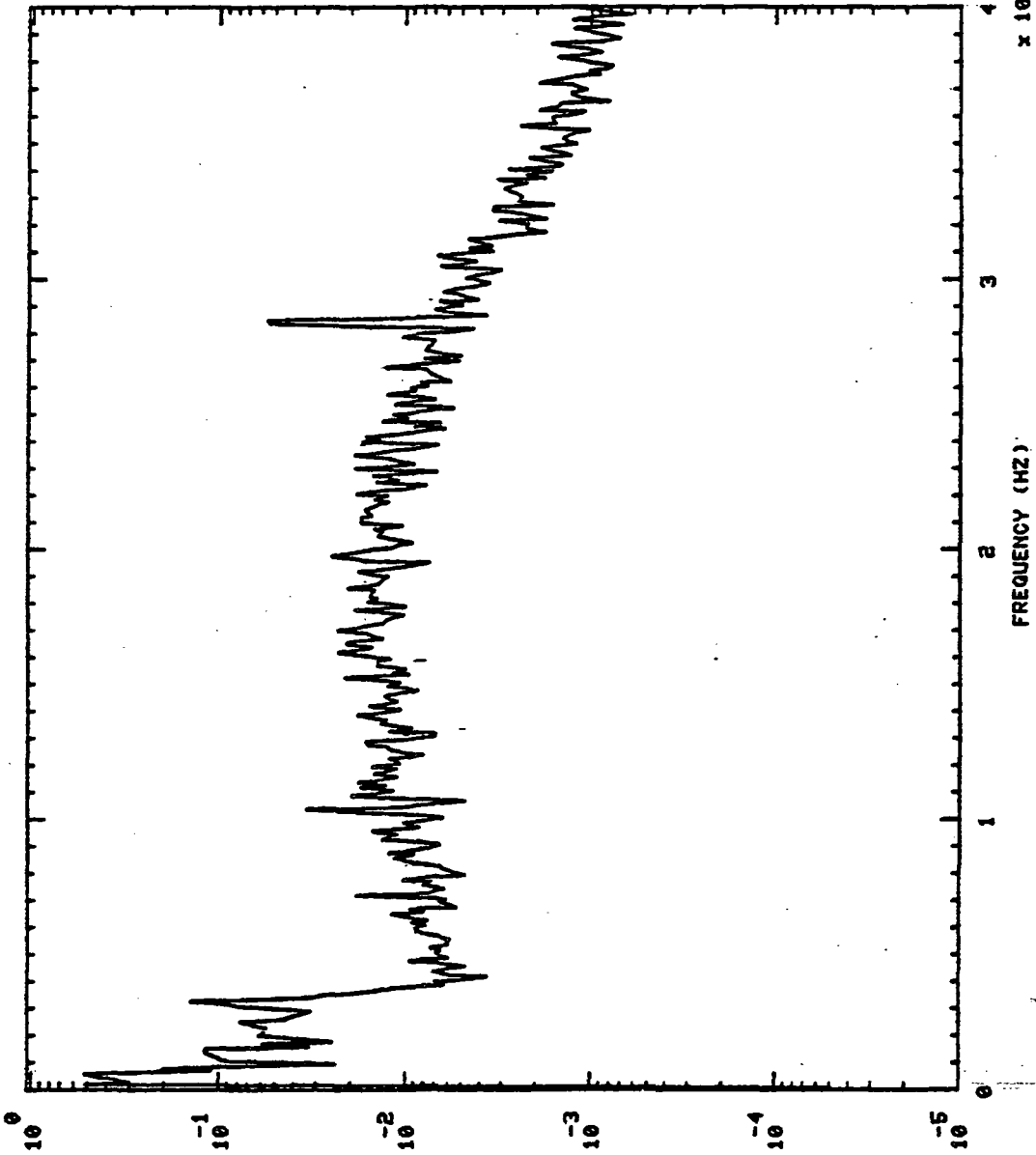
x 10^4

901290 MCC HOT GAS IN PR St 195.01H0.15

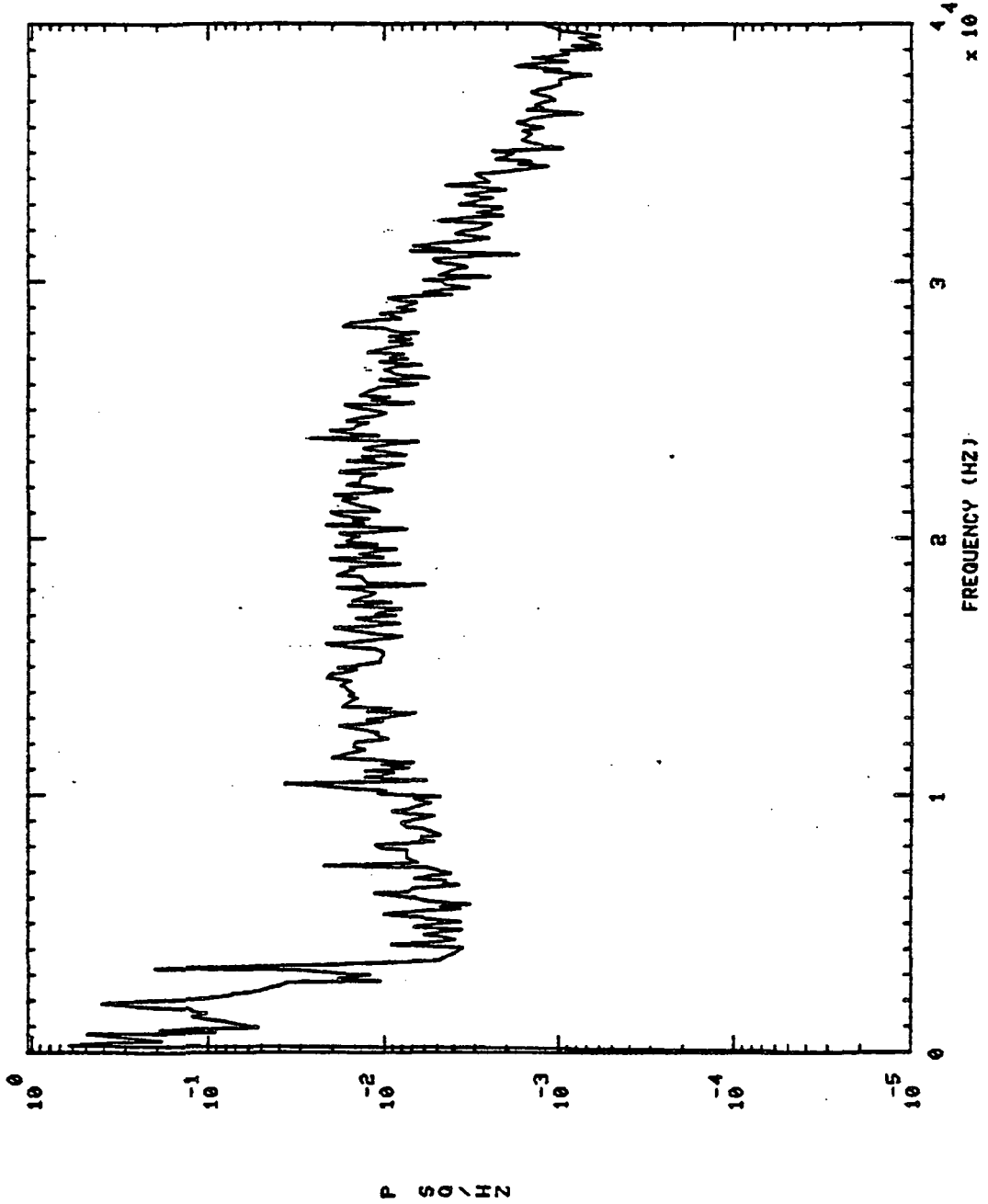


901290 MCC HOT GAS IN PR ST 315.0140,'S

901290 MCC HOT GAS IN PR

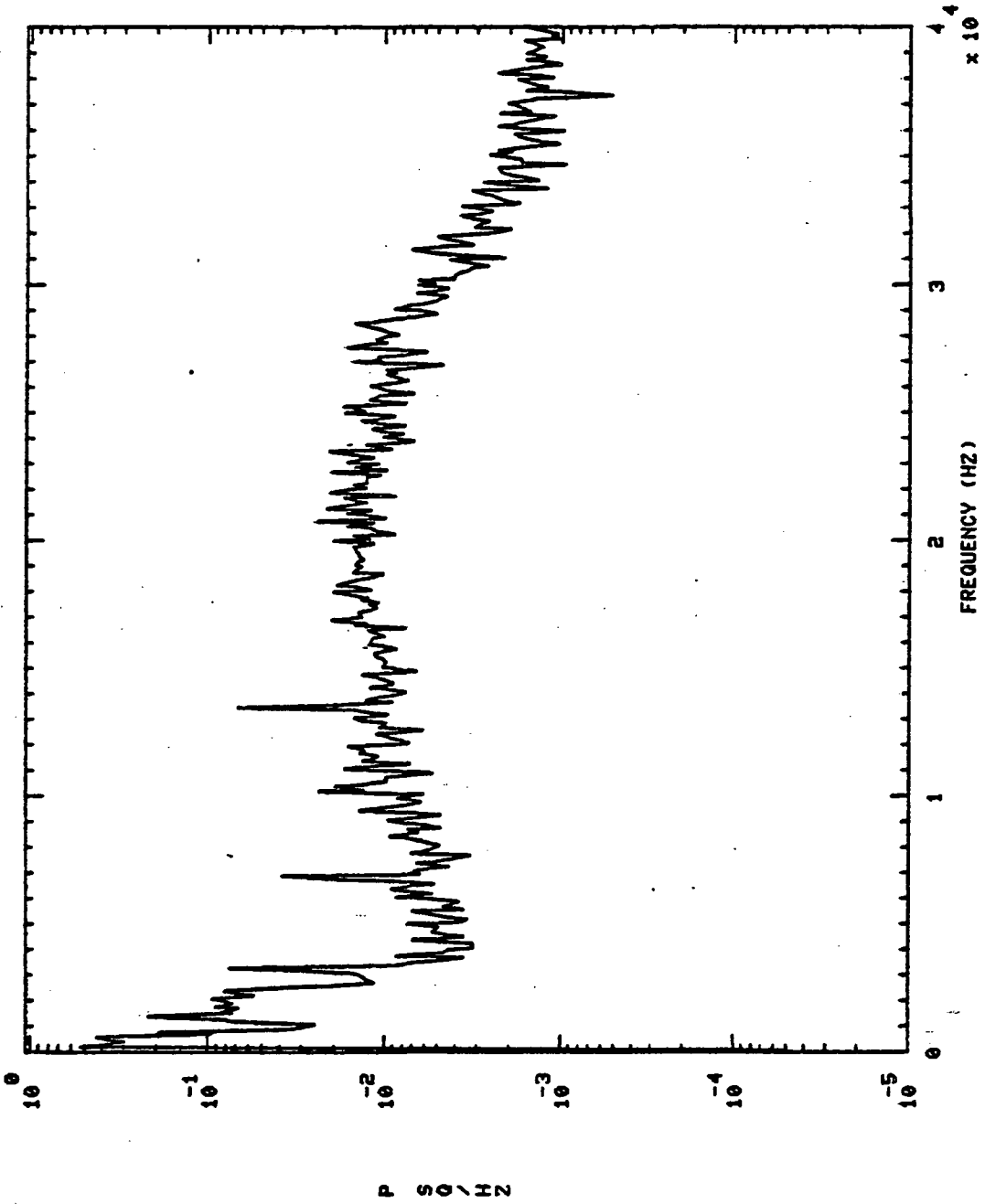


901290 MCC HOT GAS IN FR S+ 435.01H0,'S

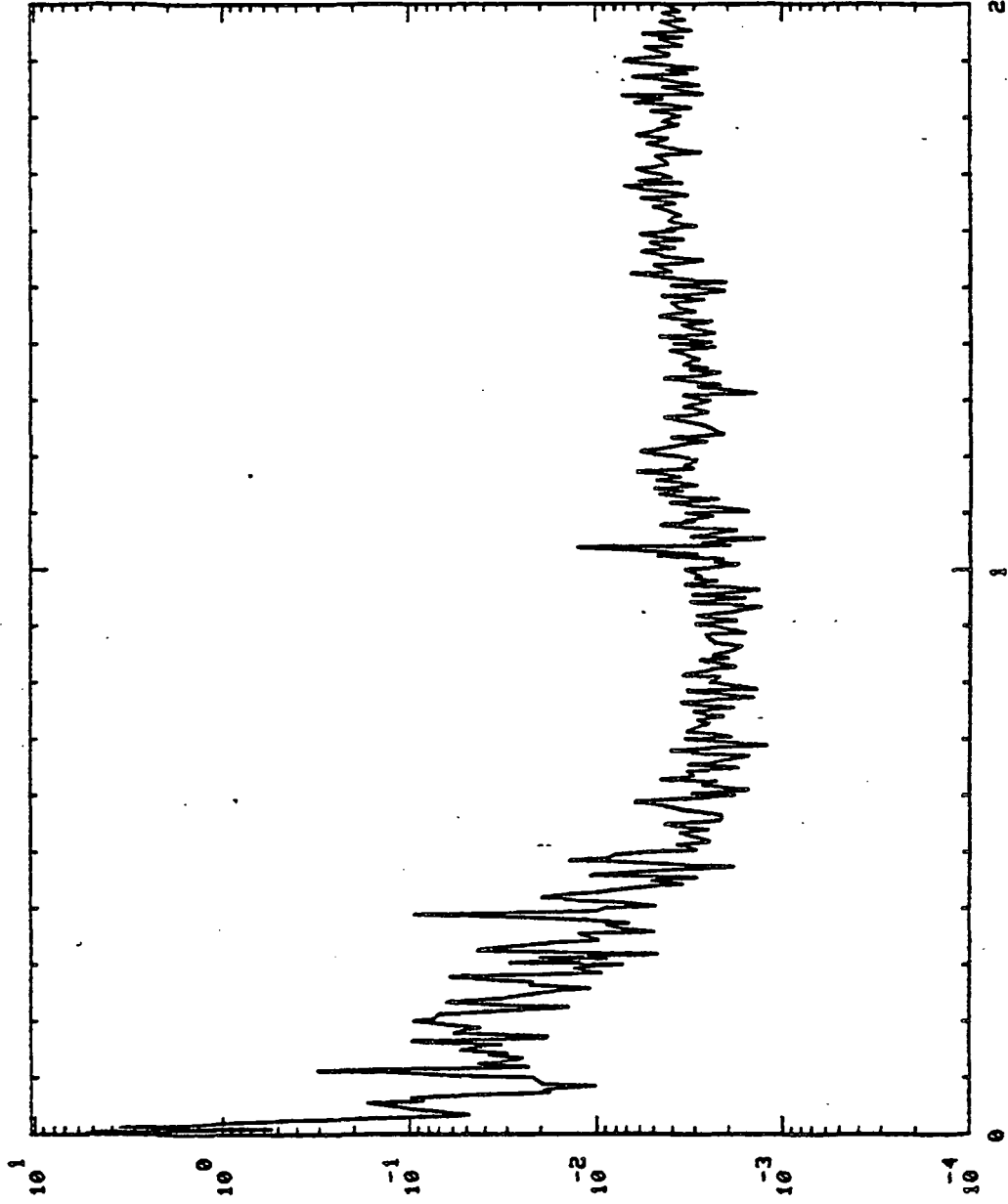


1

901290 MCC HOT GAS IN PR S+ 500.01H0,'S



901293 HPOP DS PR S+ 10.01MO,'S



P S Q \ H Z

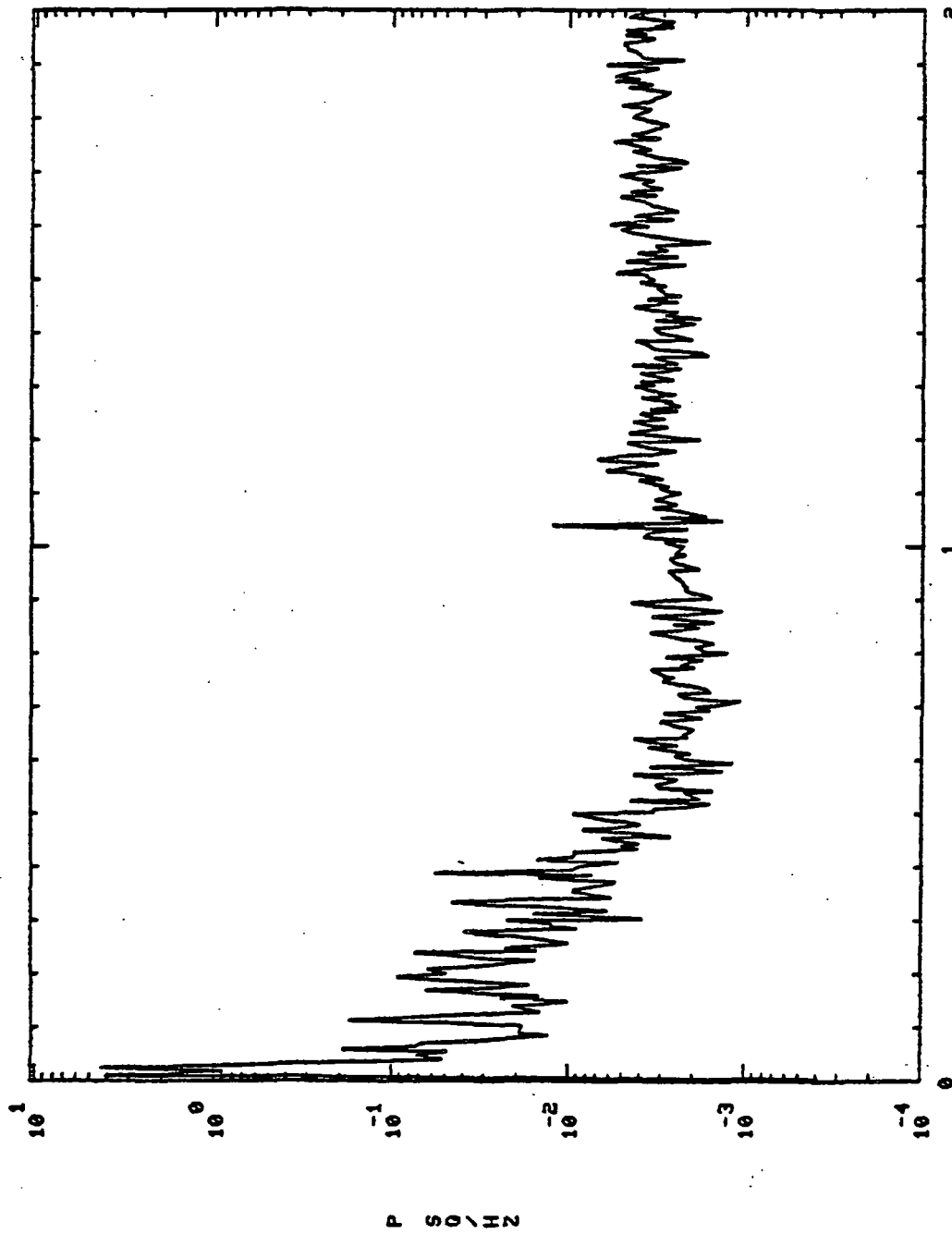
901893 HPOP DS PR S+ 200.01H0,'S

901893 HPOP DS PR

901893

HPOP DS PR

S+ 200.01H0,'S

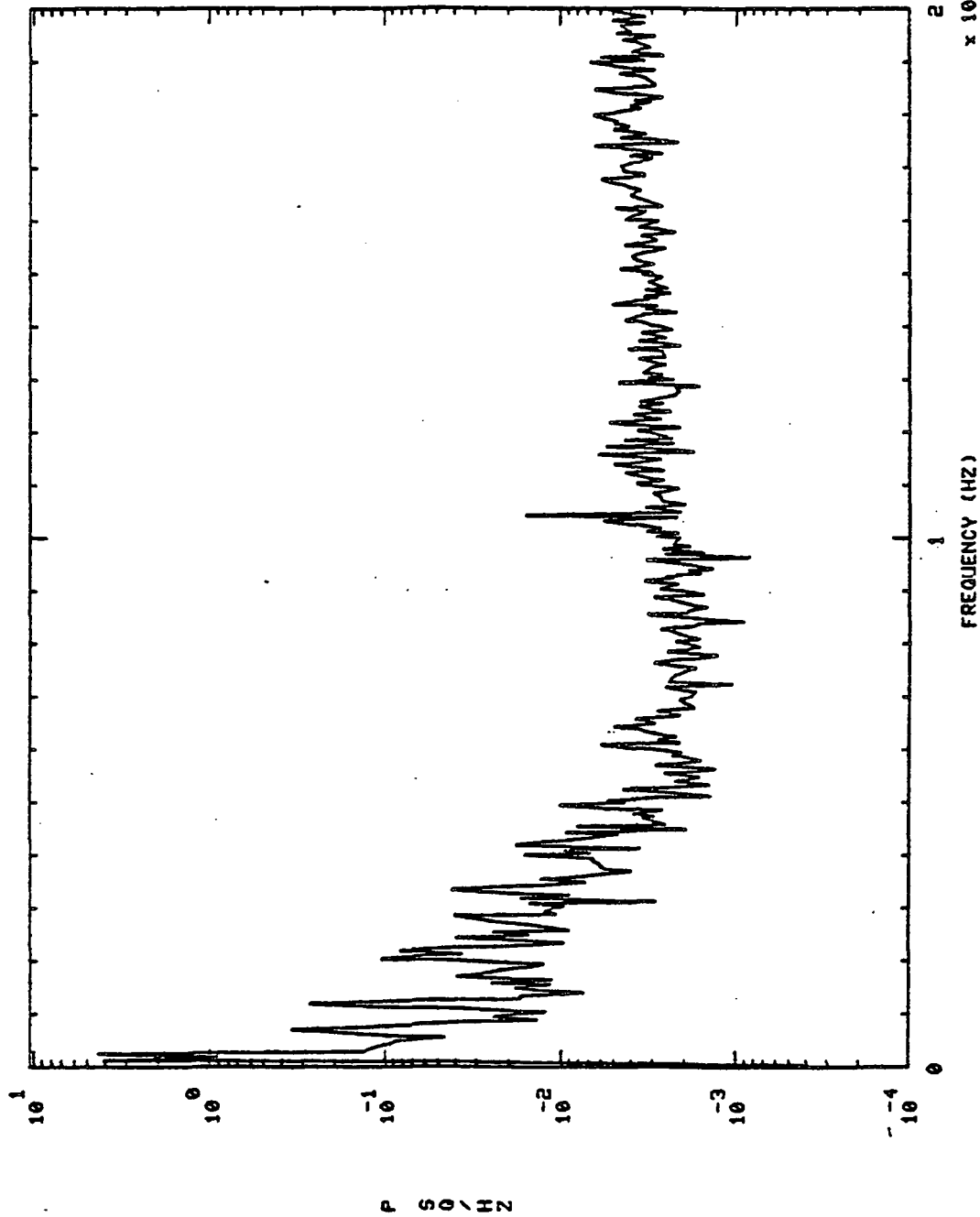


$2.4$   
 $\times 10$

FREQUENCY (HZ)

S+ 400.01H0, 'S

901293 HPOP DS PR





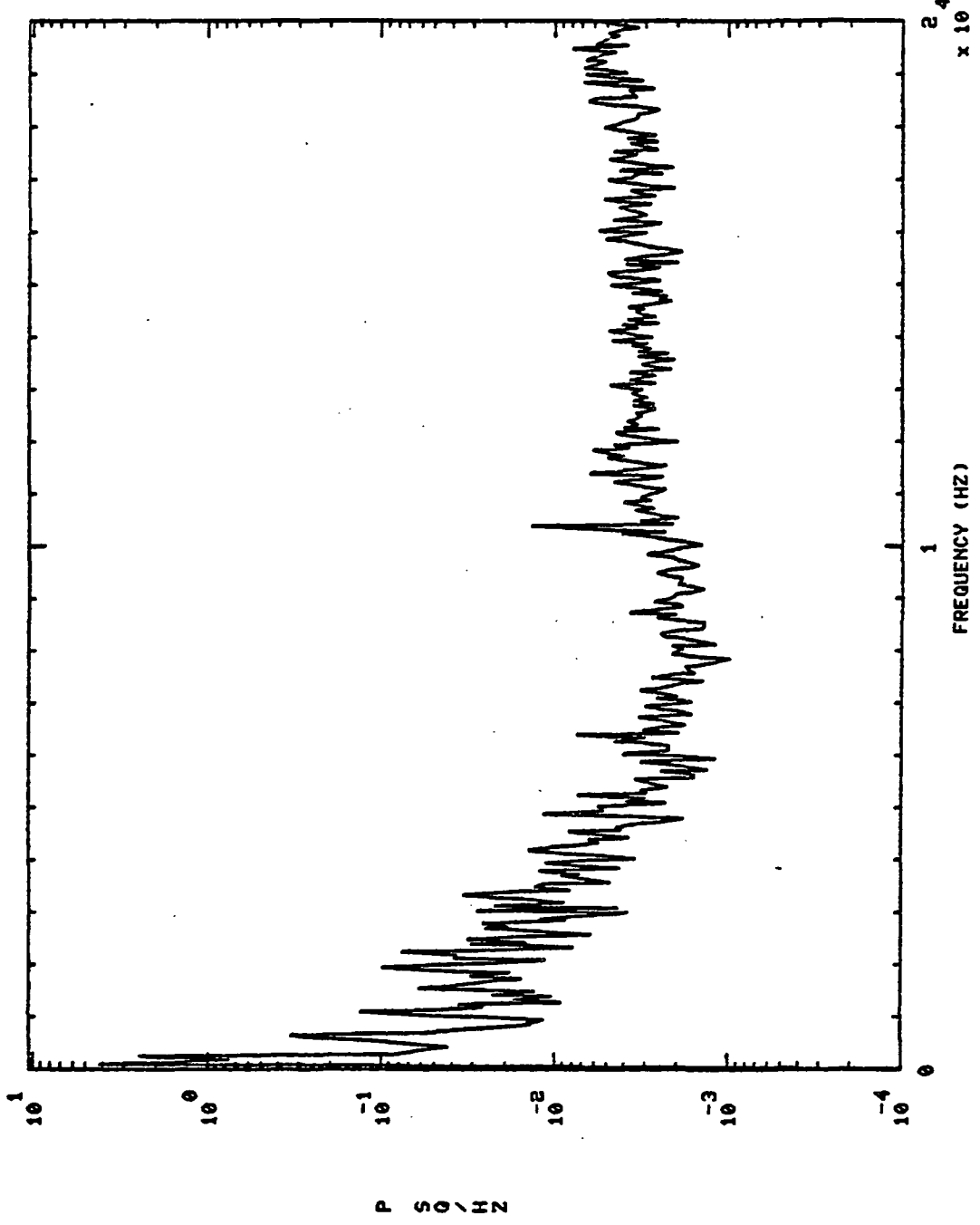
901293 HPOP DS PR S+ 600.01H0.'S

901293 HPOP DS PR

901293

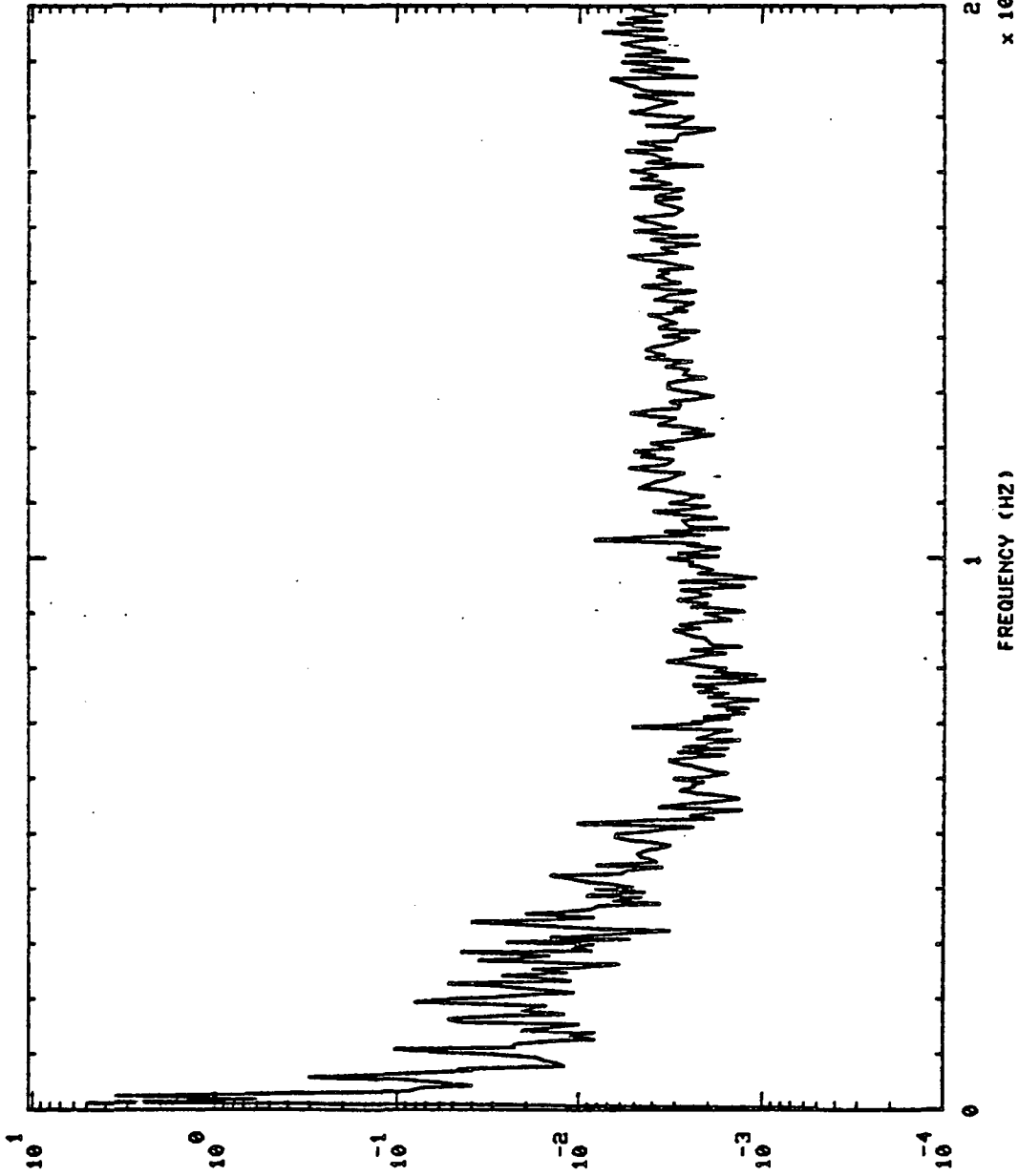
HPOP DS PR

S+ 600.01H0.'S

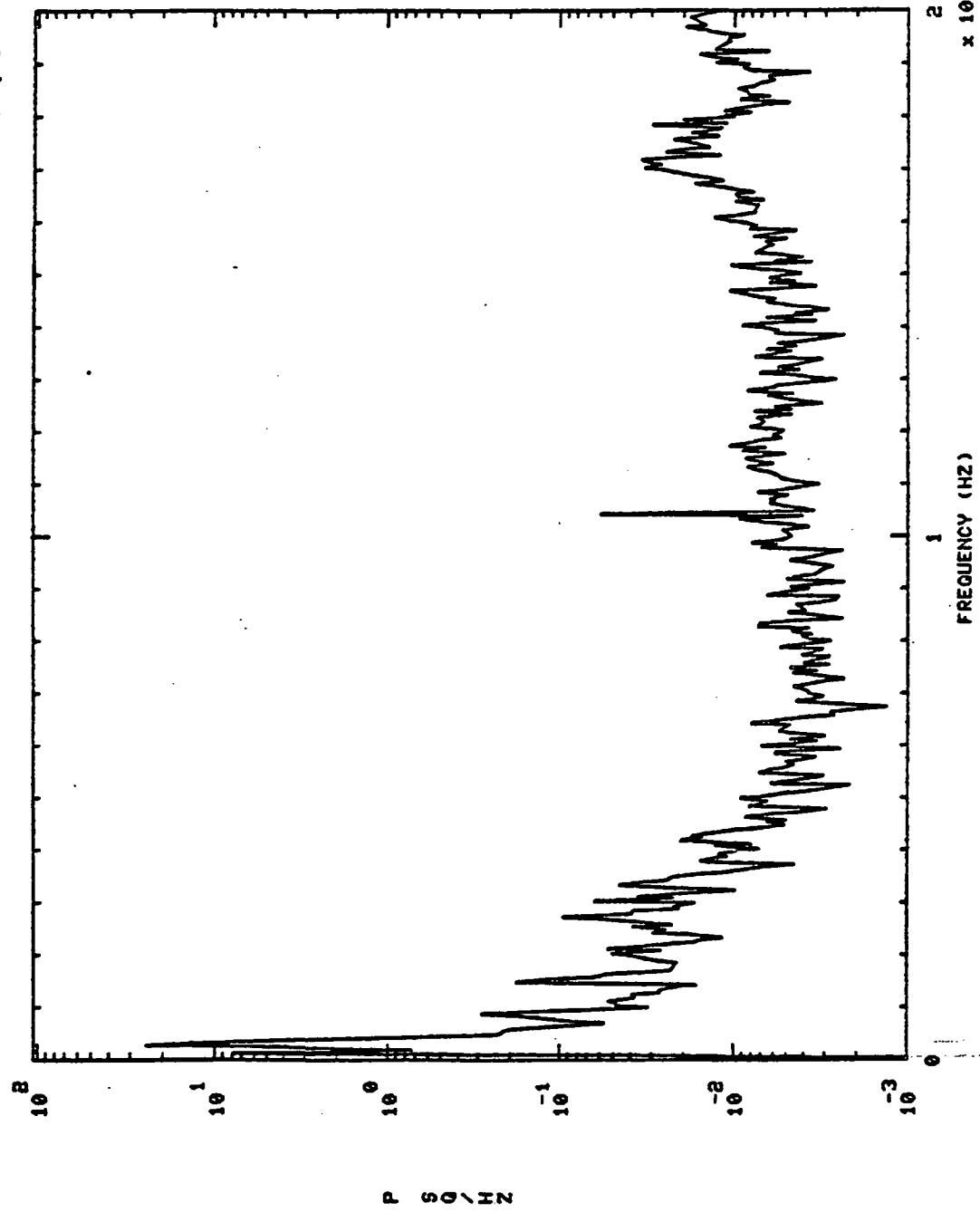


S+ 800.01H0,'S

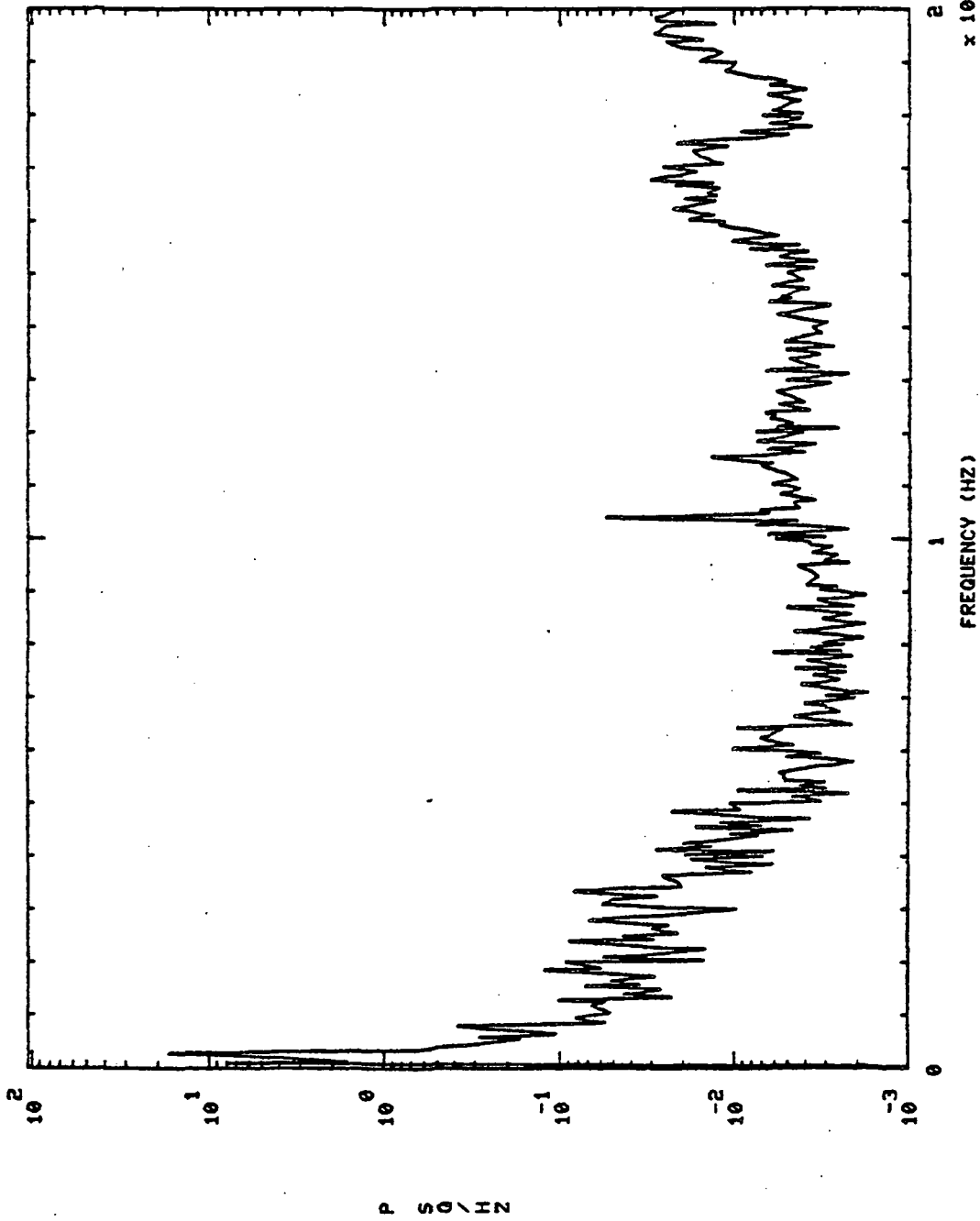
901293 HPOP DS PR



901293 PBP DS PR S+ 10.01H0,'S

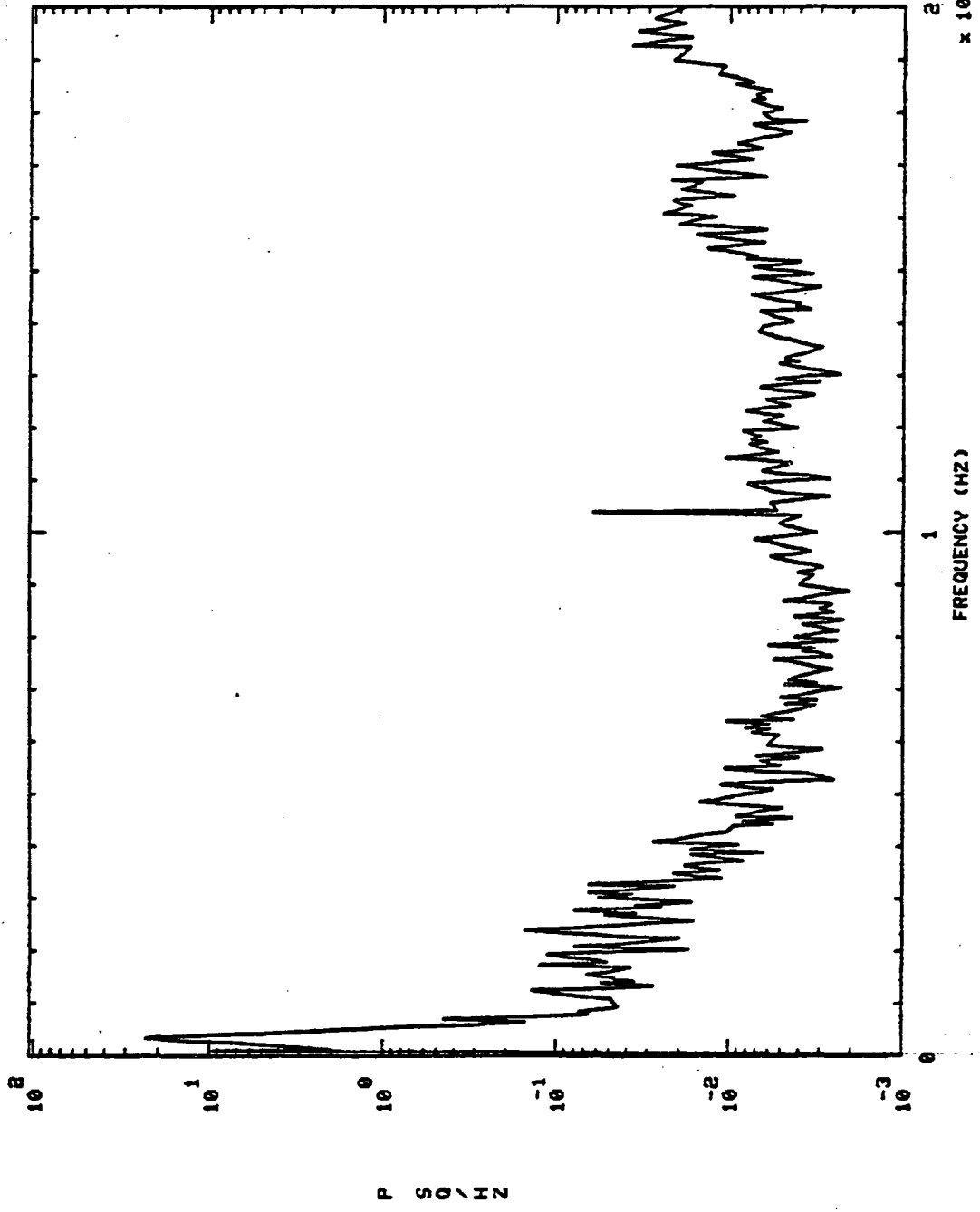


901293 PBP DS PR 5+ 200.01H0,'S



S+ 400.01H0,'5

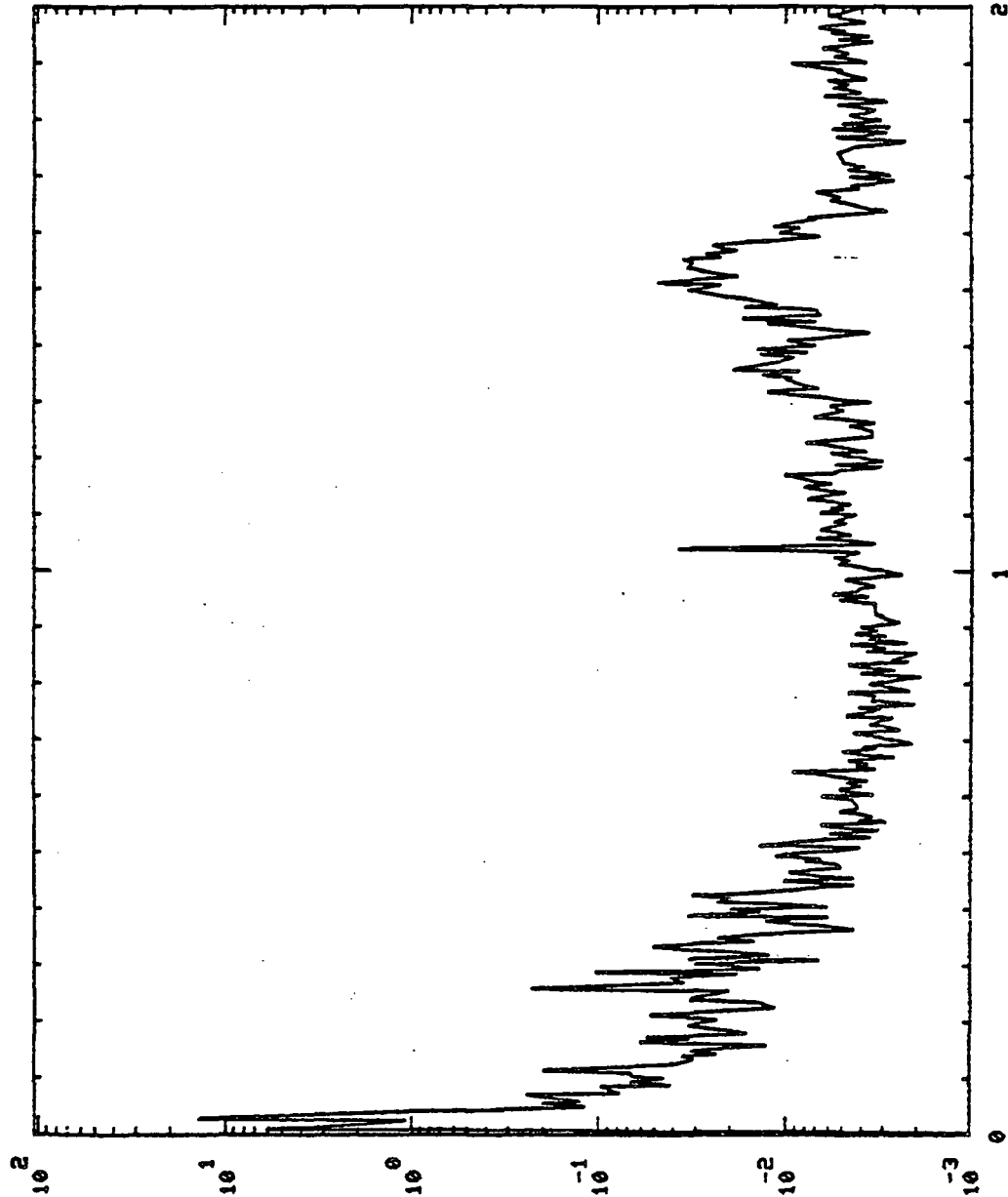
901293 PBP DS PR



S+ 600.01H0.'S

PBP DS PR

901293

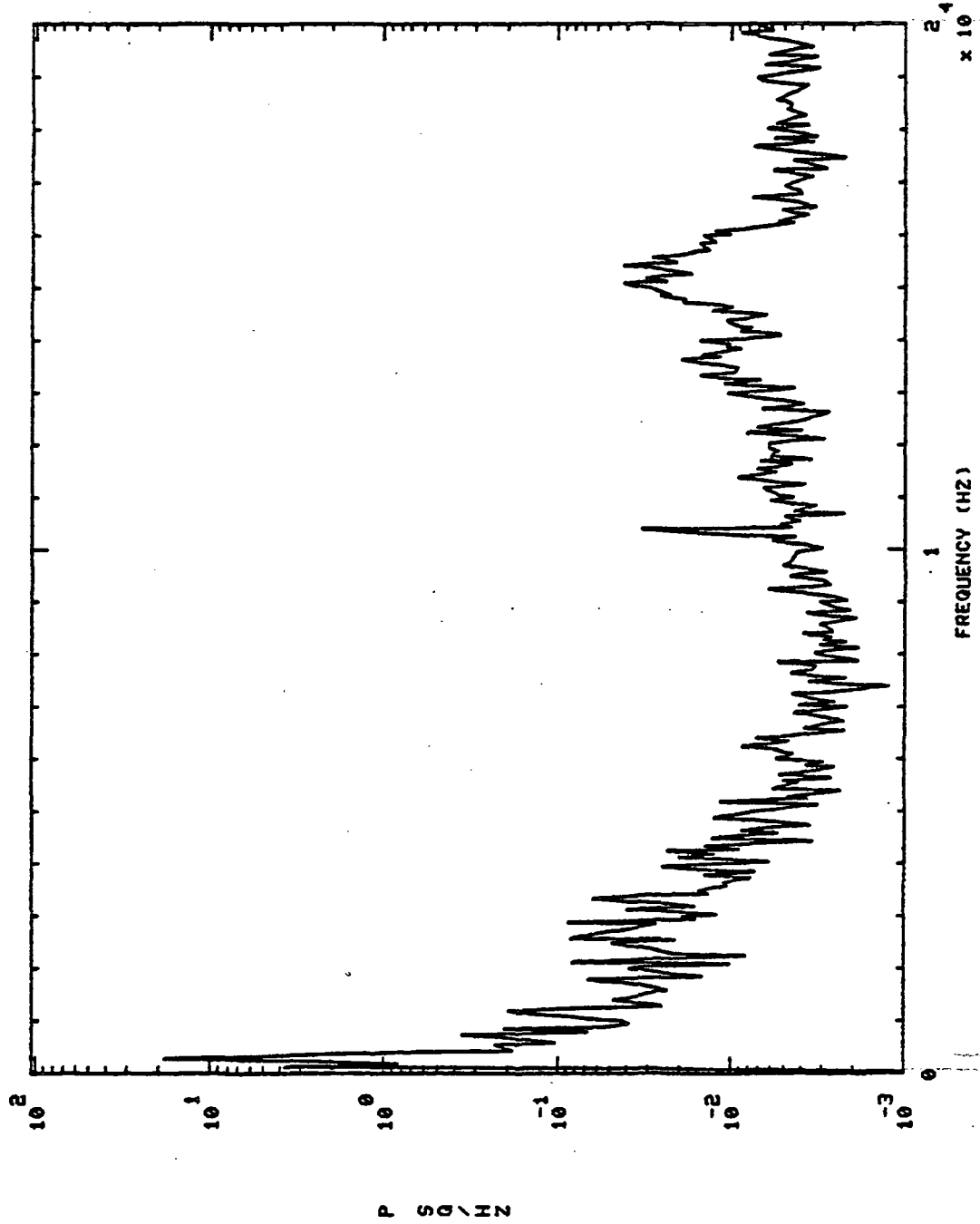


FREQUENCY (HZ) x 10<sup>4</sup>

PSD / HZ

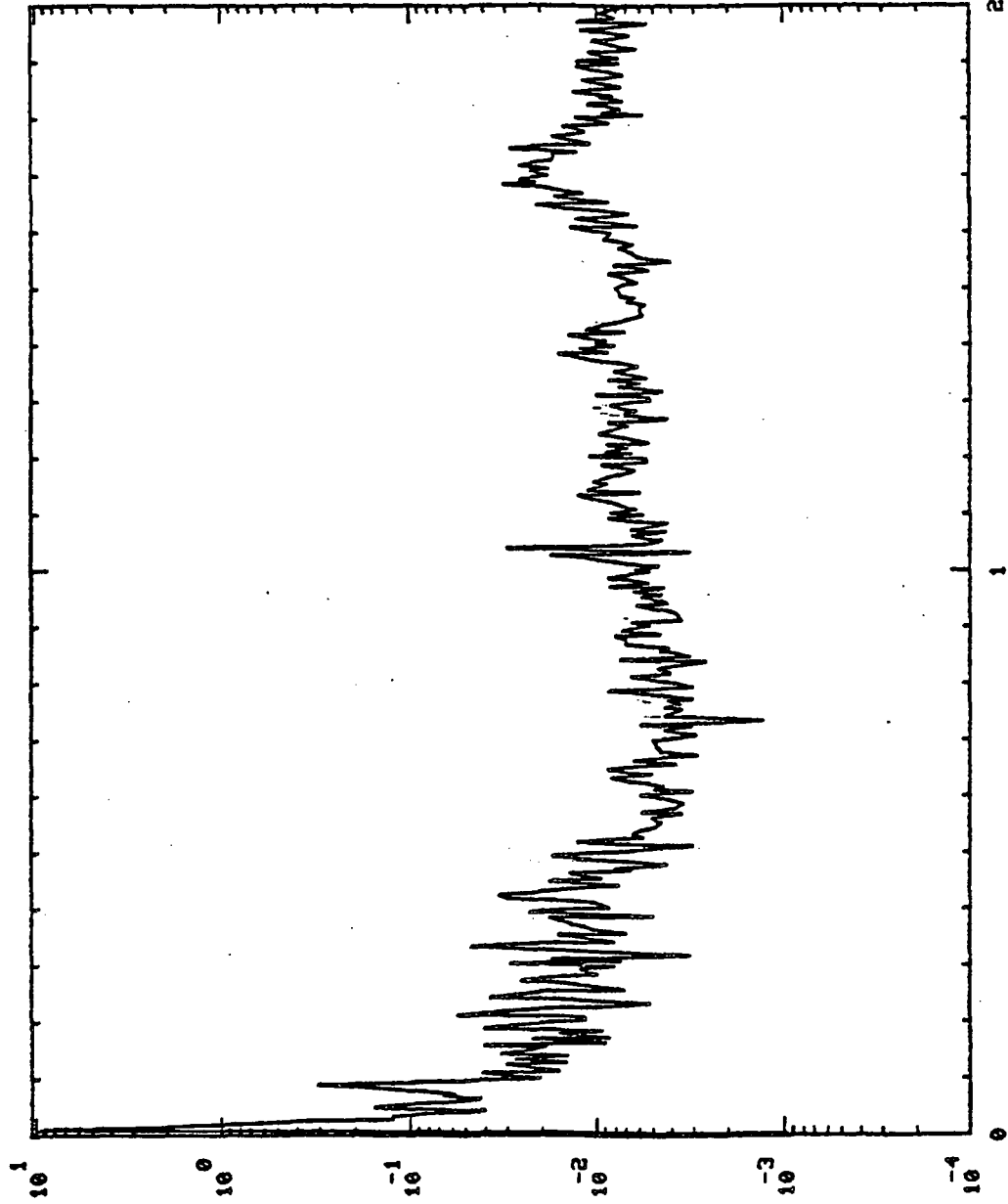
S+ 800.01H0,'S

901293 PBP DS PR



S+ 10.0

901293 OPB PC PR DC



$10^4$   
 $\times 10^4$

FREQUENCY (HZ)

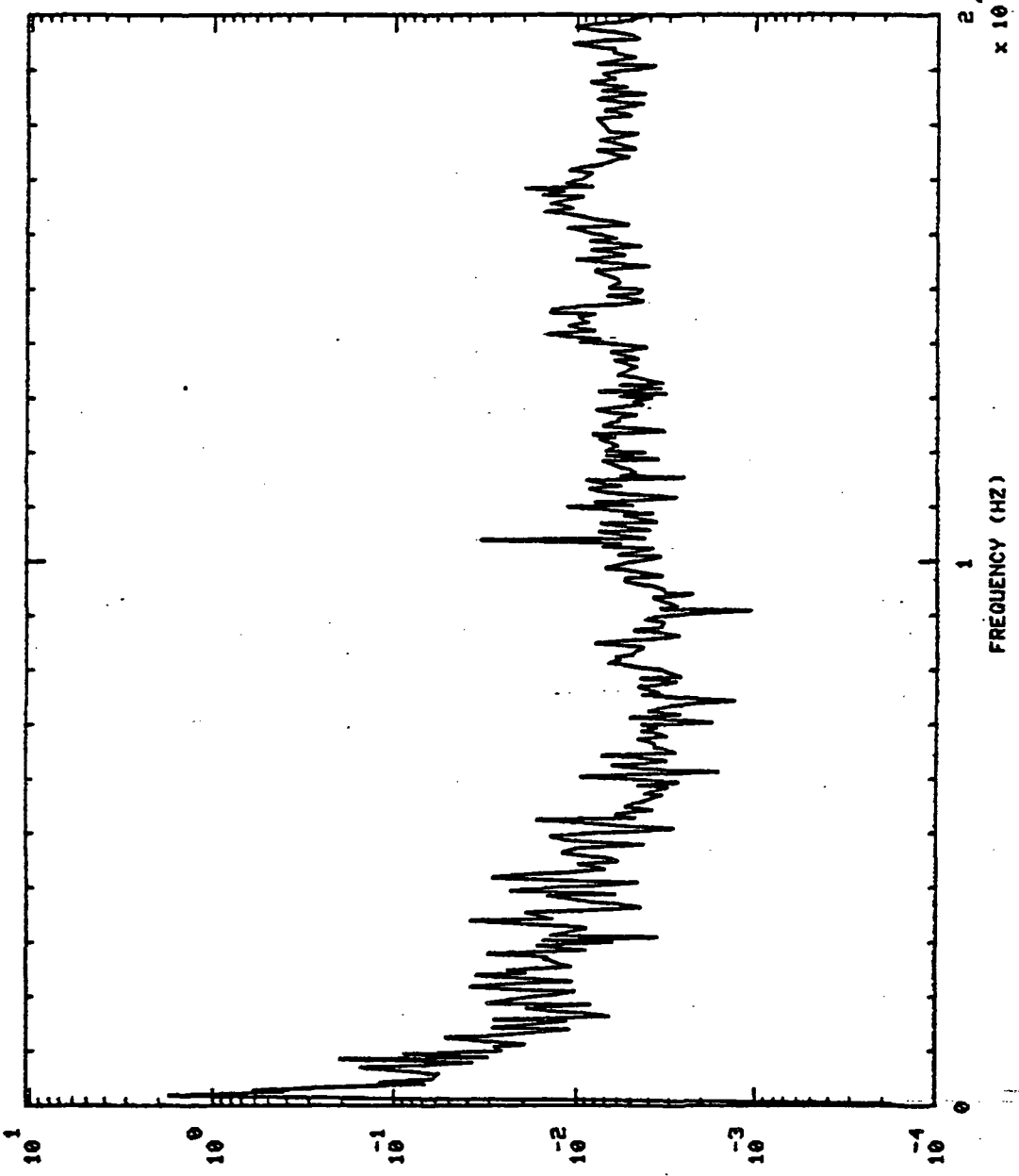
PSQ / HZ



S+ 200.01M0,'S

OPB PC PR DC

901293



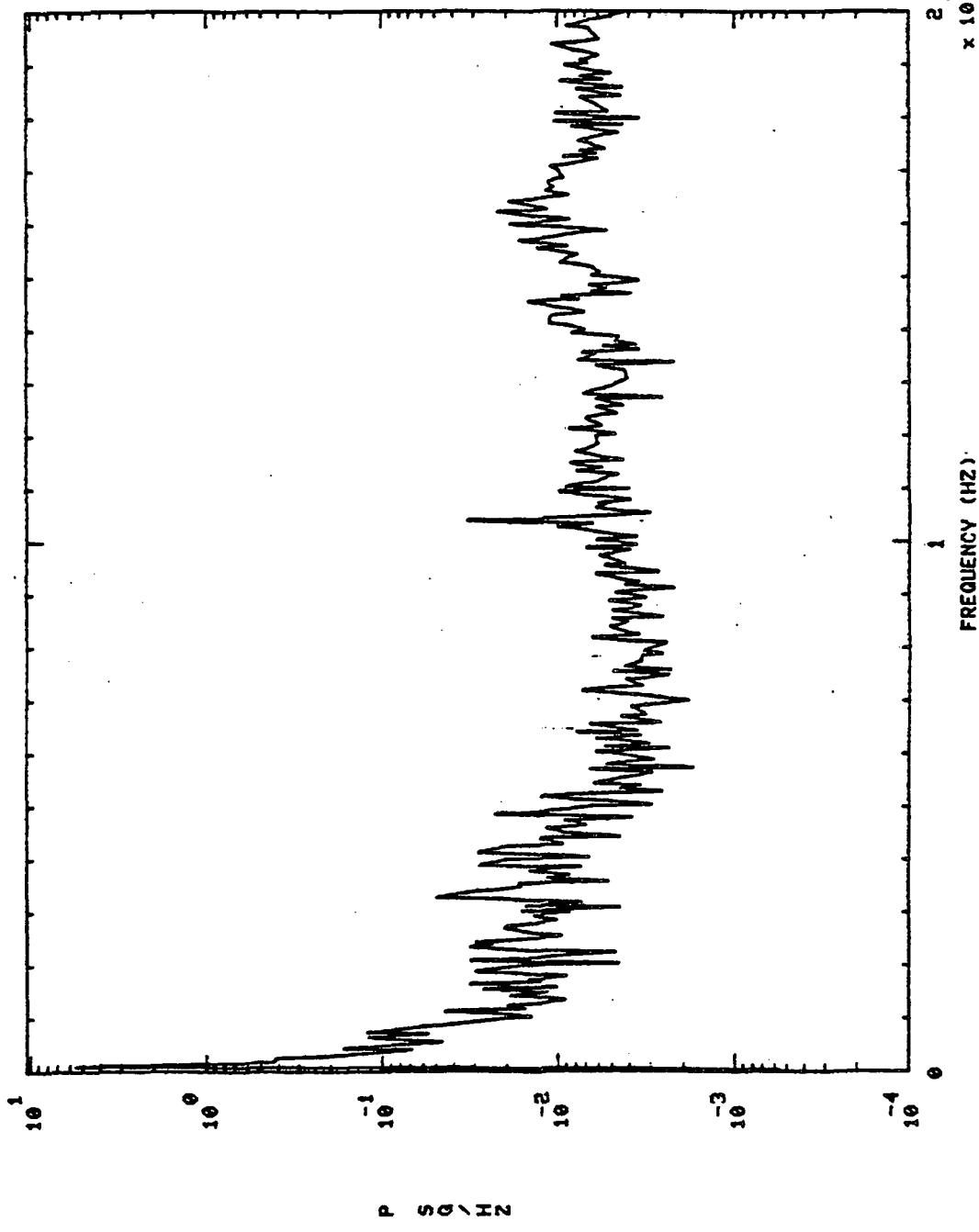
P SQ IN

FREQUENCY (HZ)

x 10<sup>4</sup>

801293 OPB FC PR DC

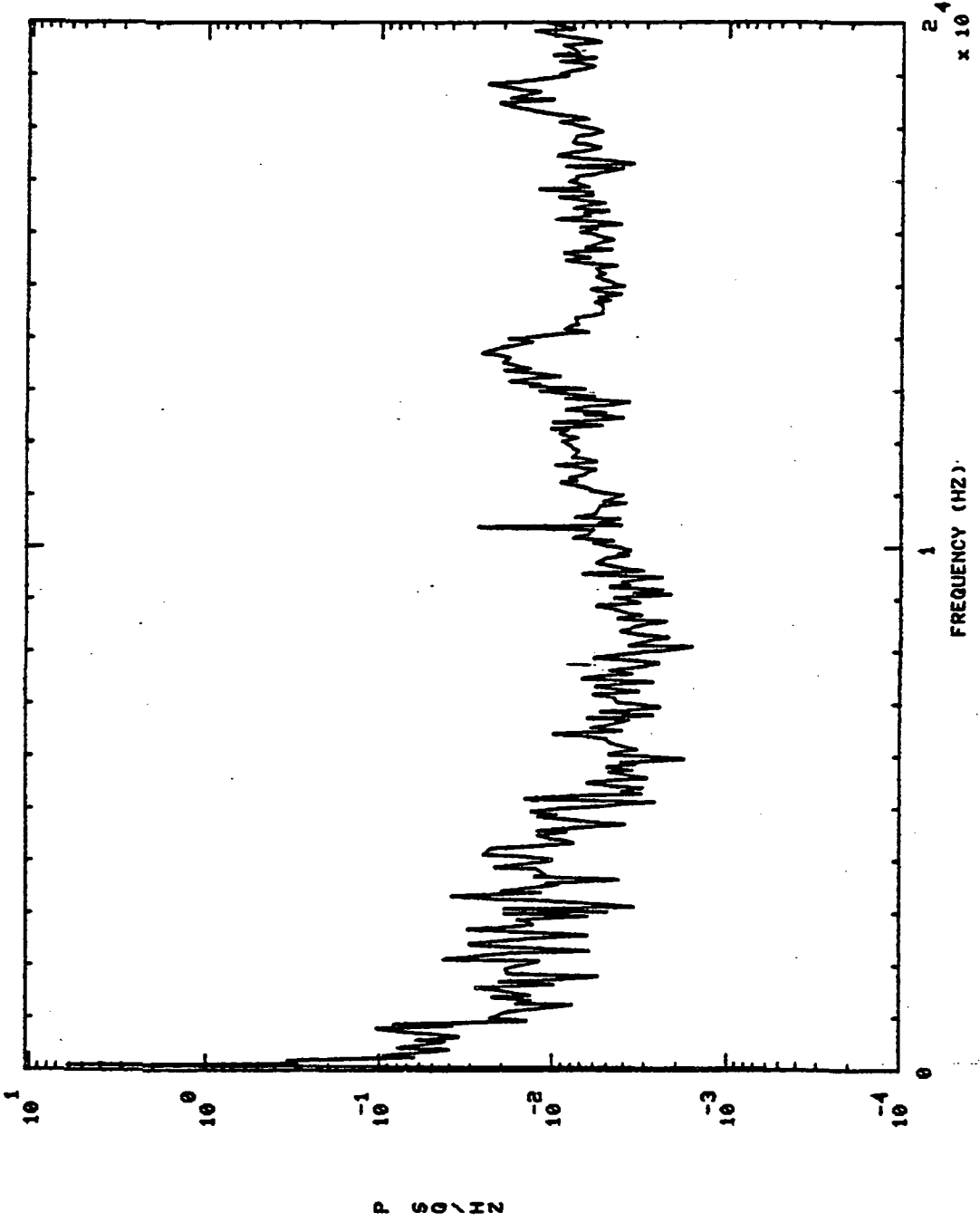
St 400.01H0, 'S



01  
10  
01

901293 : OPB PC PR DC

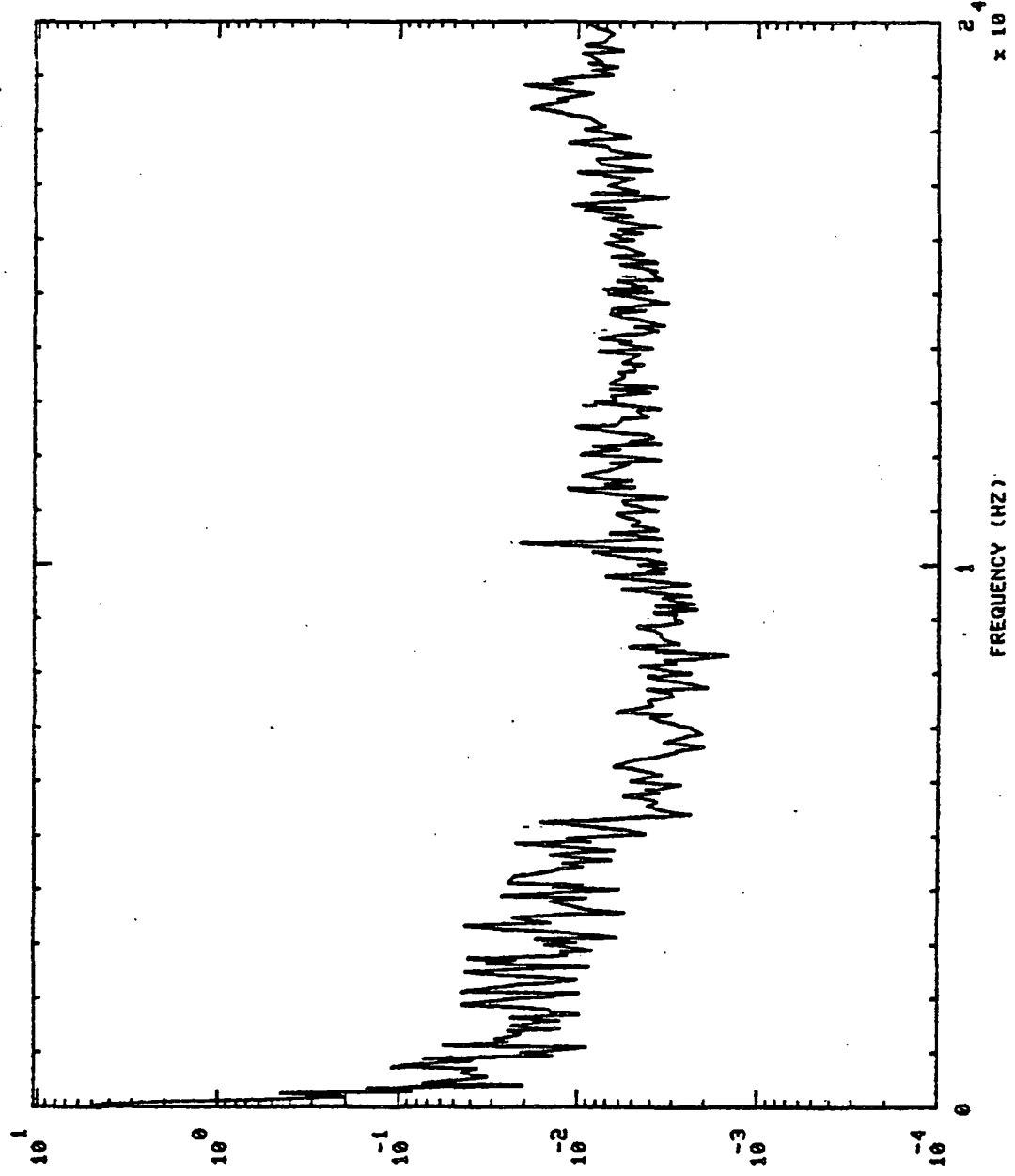
S+ 500.01H0,'S



S+ 800.01H0,'S

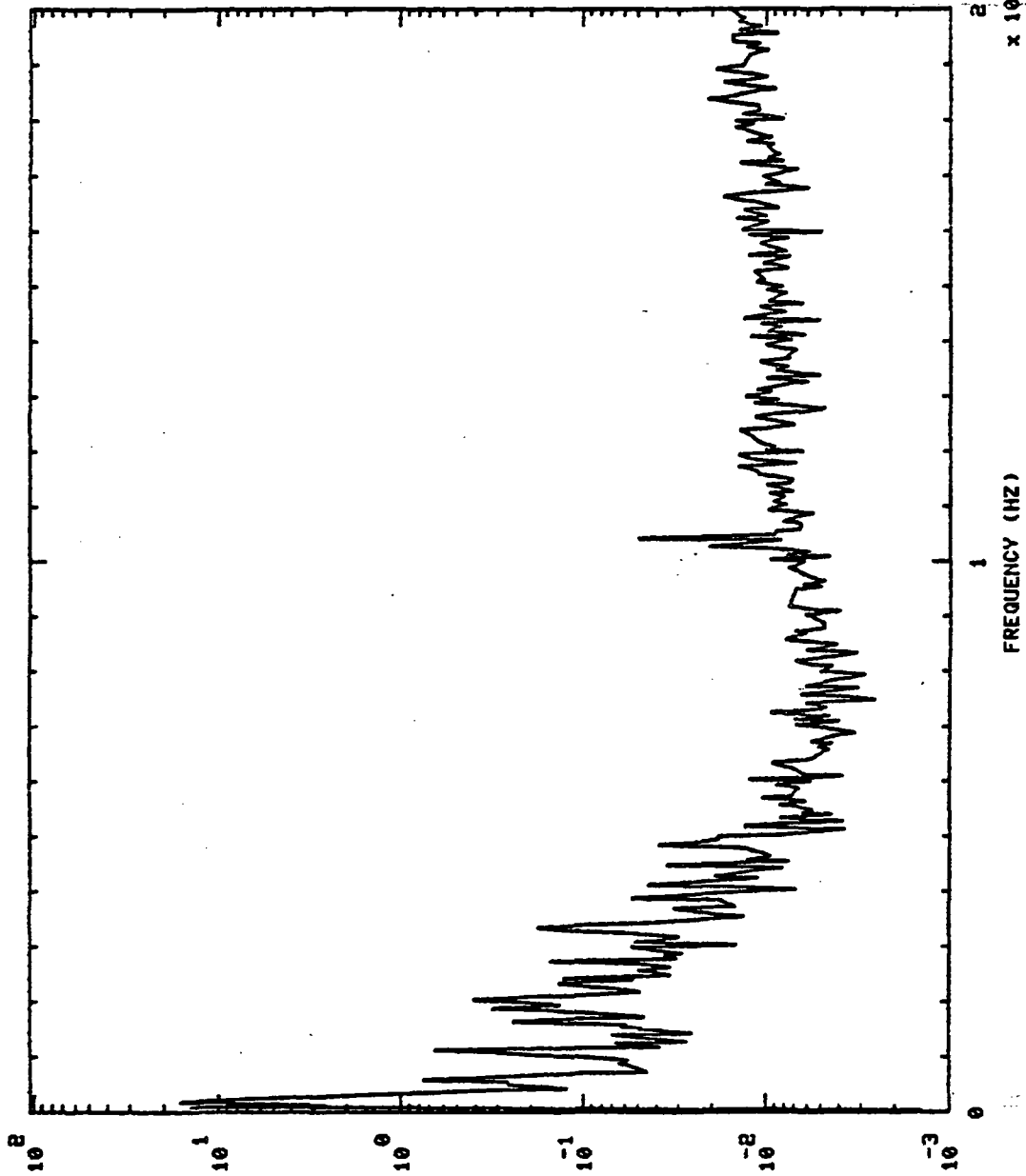
OPB PC PR DC

901293



S+ 10.01H0,'S

901294 HPOP DS PR



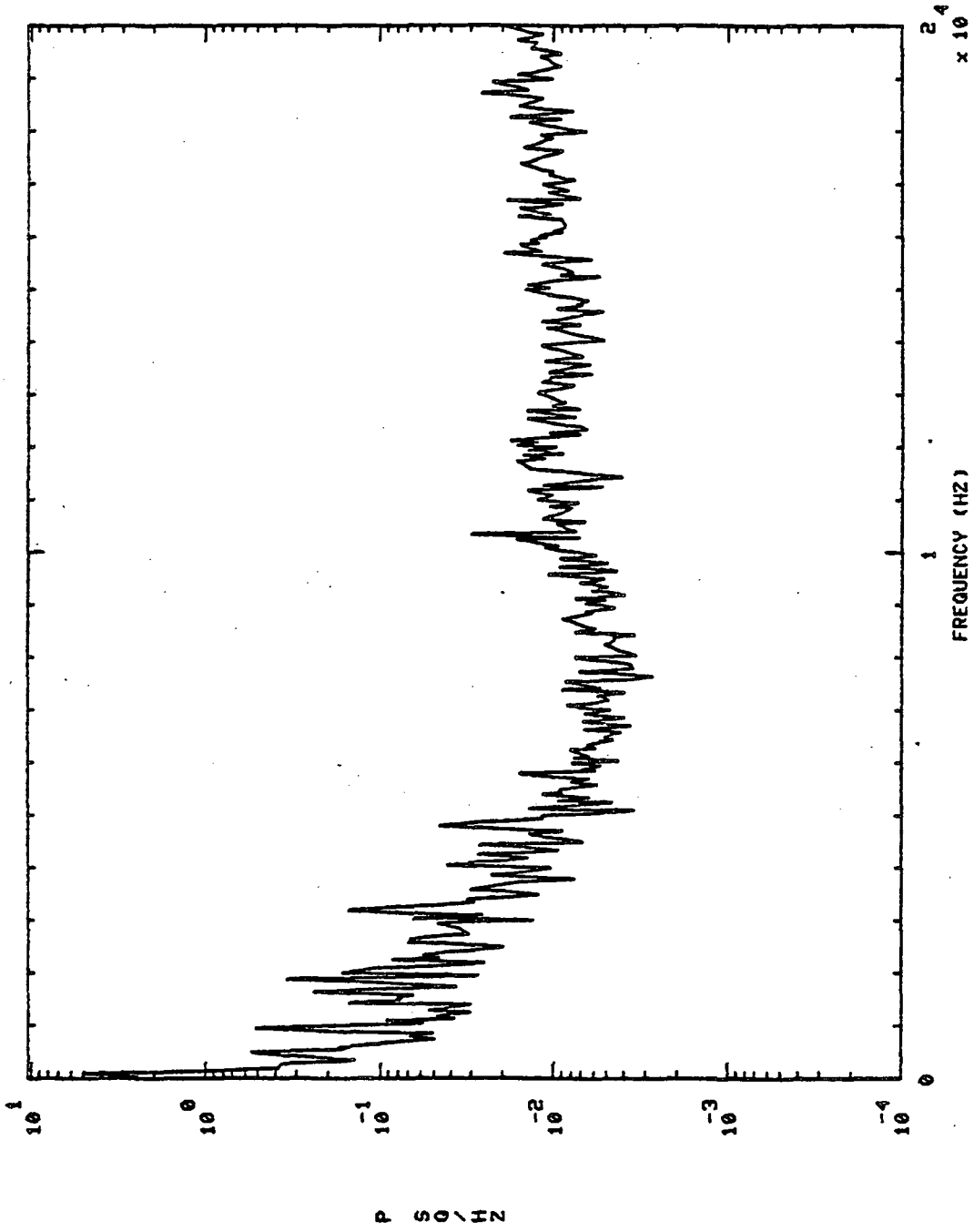
P S D / H Z

$10^4$   
x 10

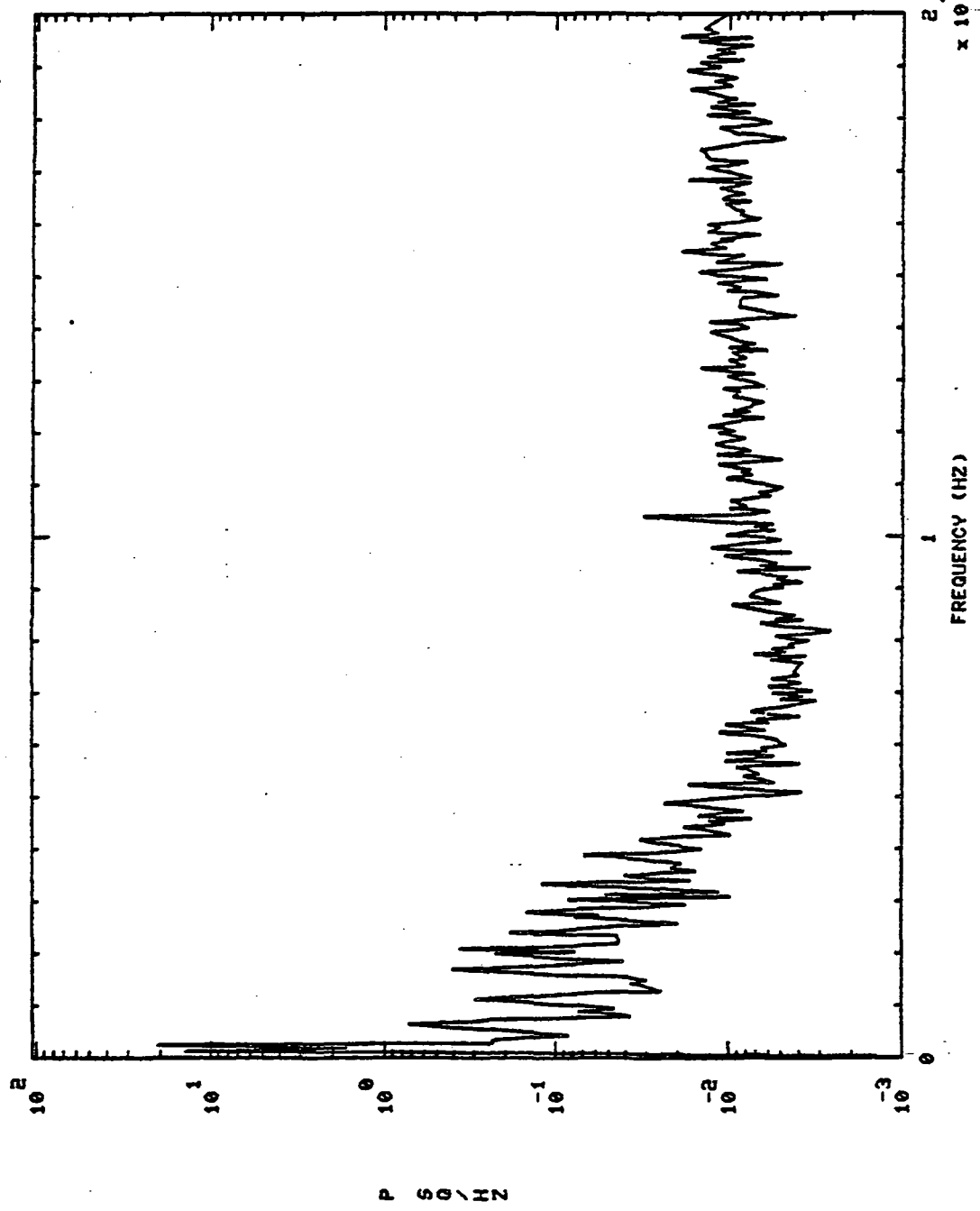
FREQUENCY (HZ)

S+ 40.01H0,'S

901294 HPOP DS PR



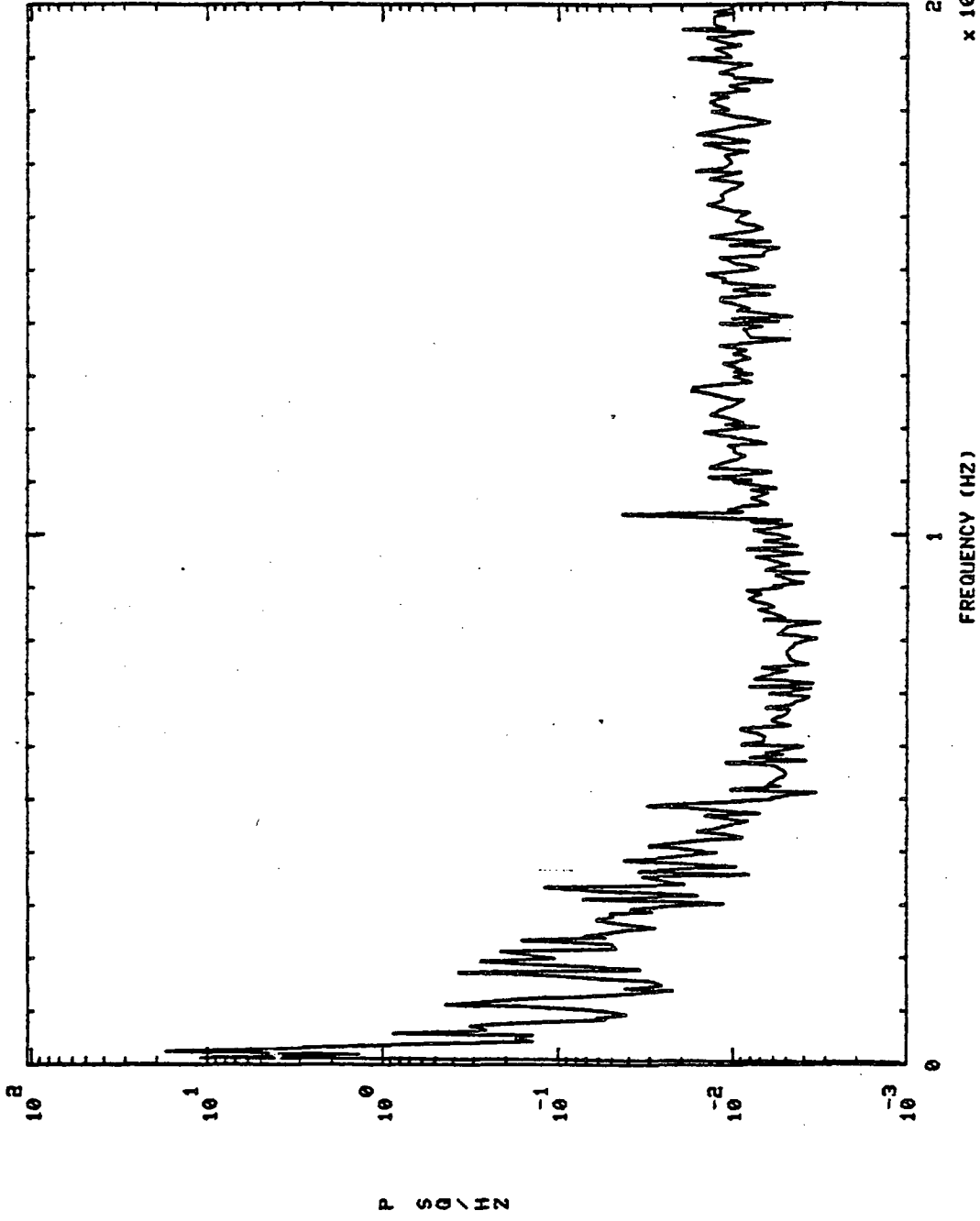
901294 MPOP DS PR S+ 100.01H0,'S



S+ 300.01H0,'S

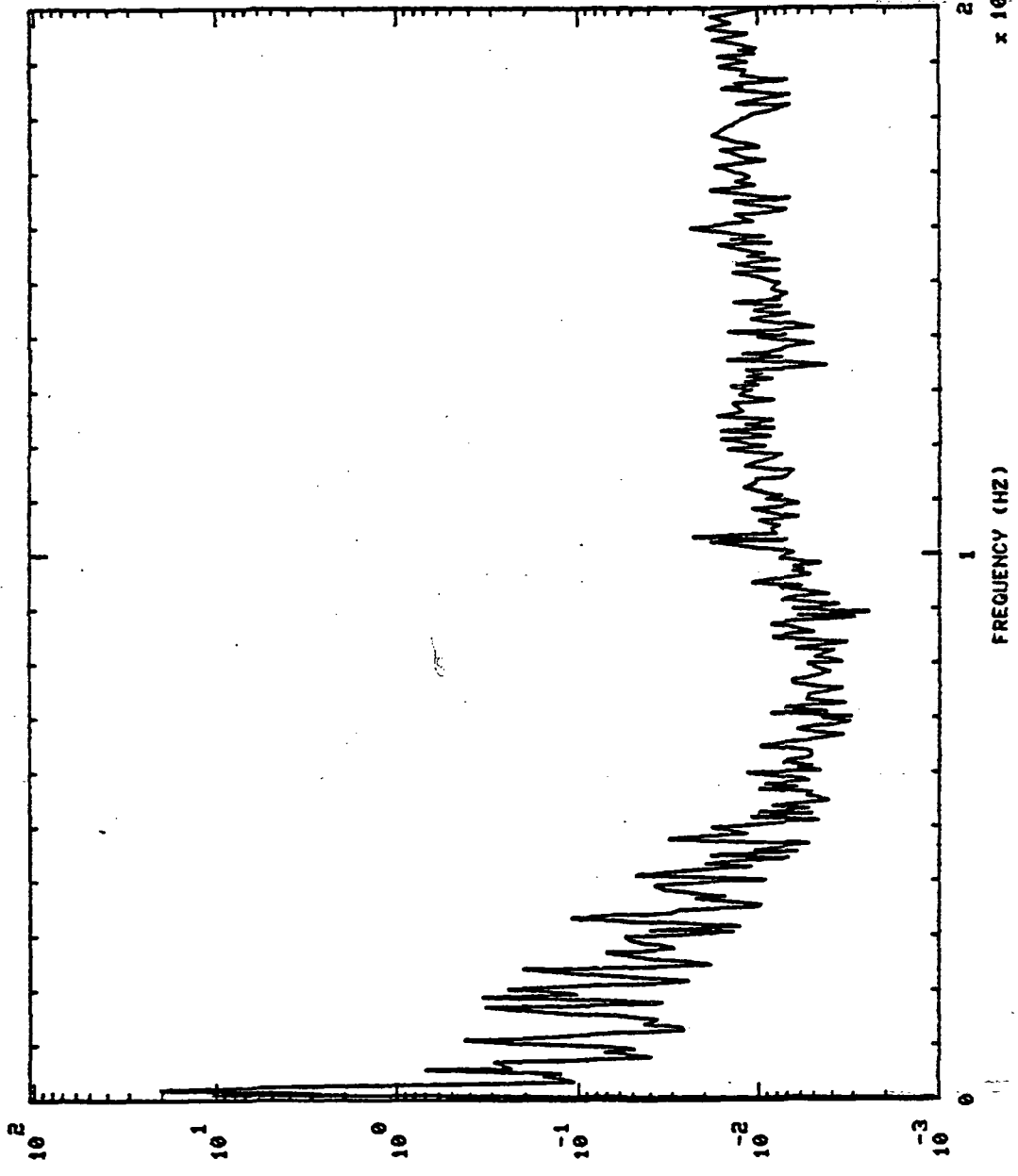
HPOP DS PR

901294





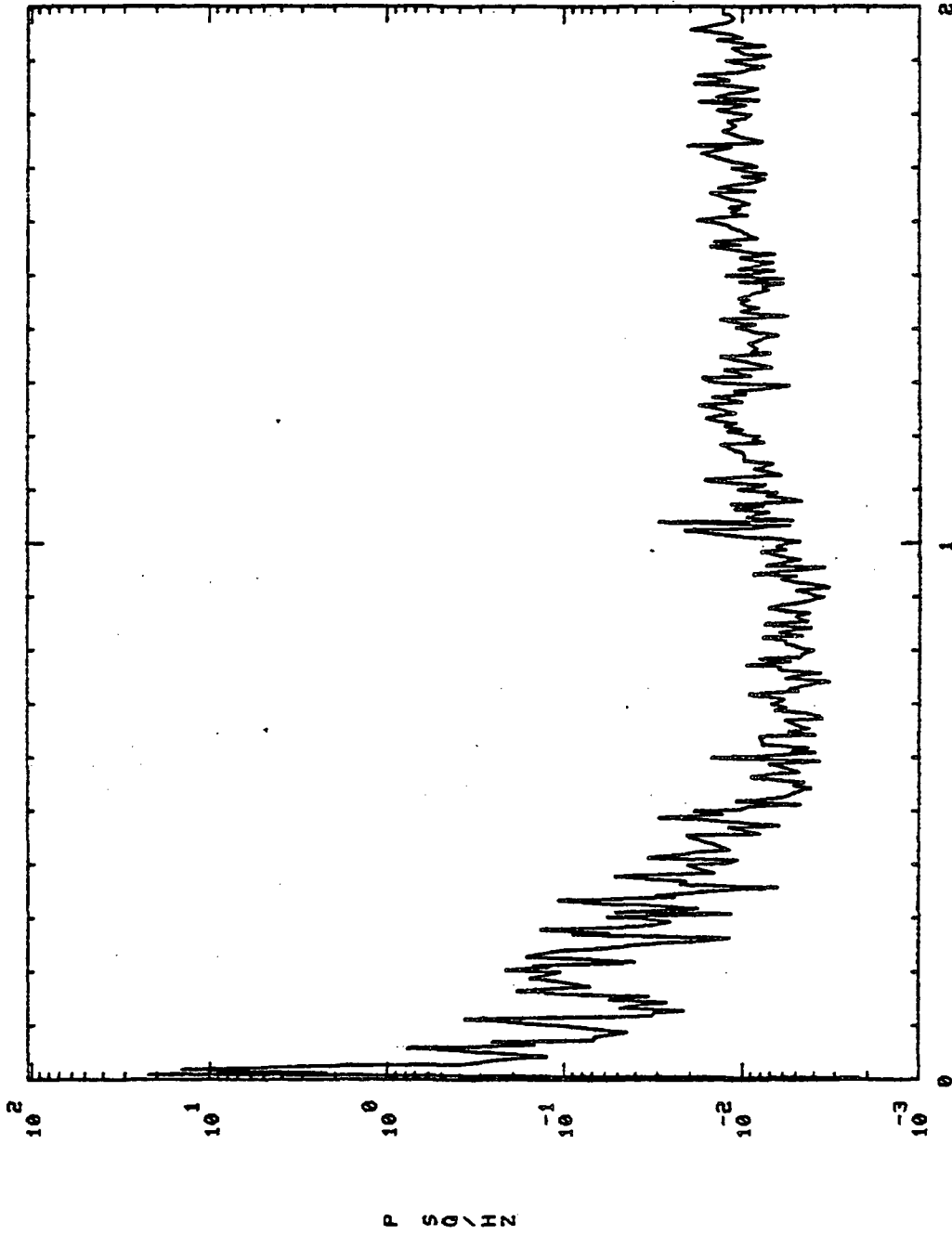
901294 HPOP DS PR S+ 500.01H0.'S



P S G / HZ

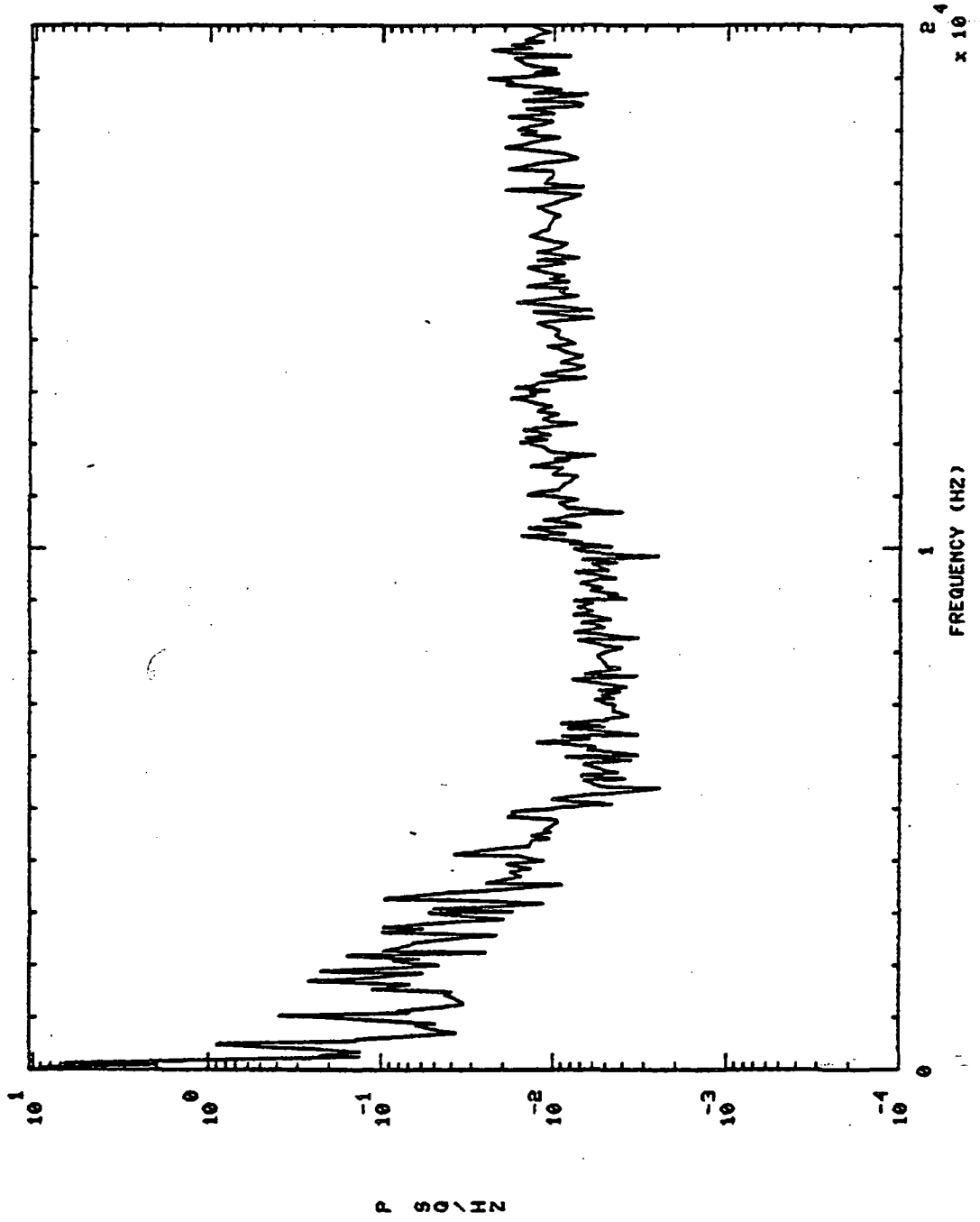
S+ 645.01HO, 'S

901294 HPOP DS PR



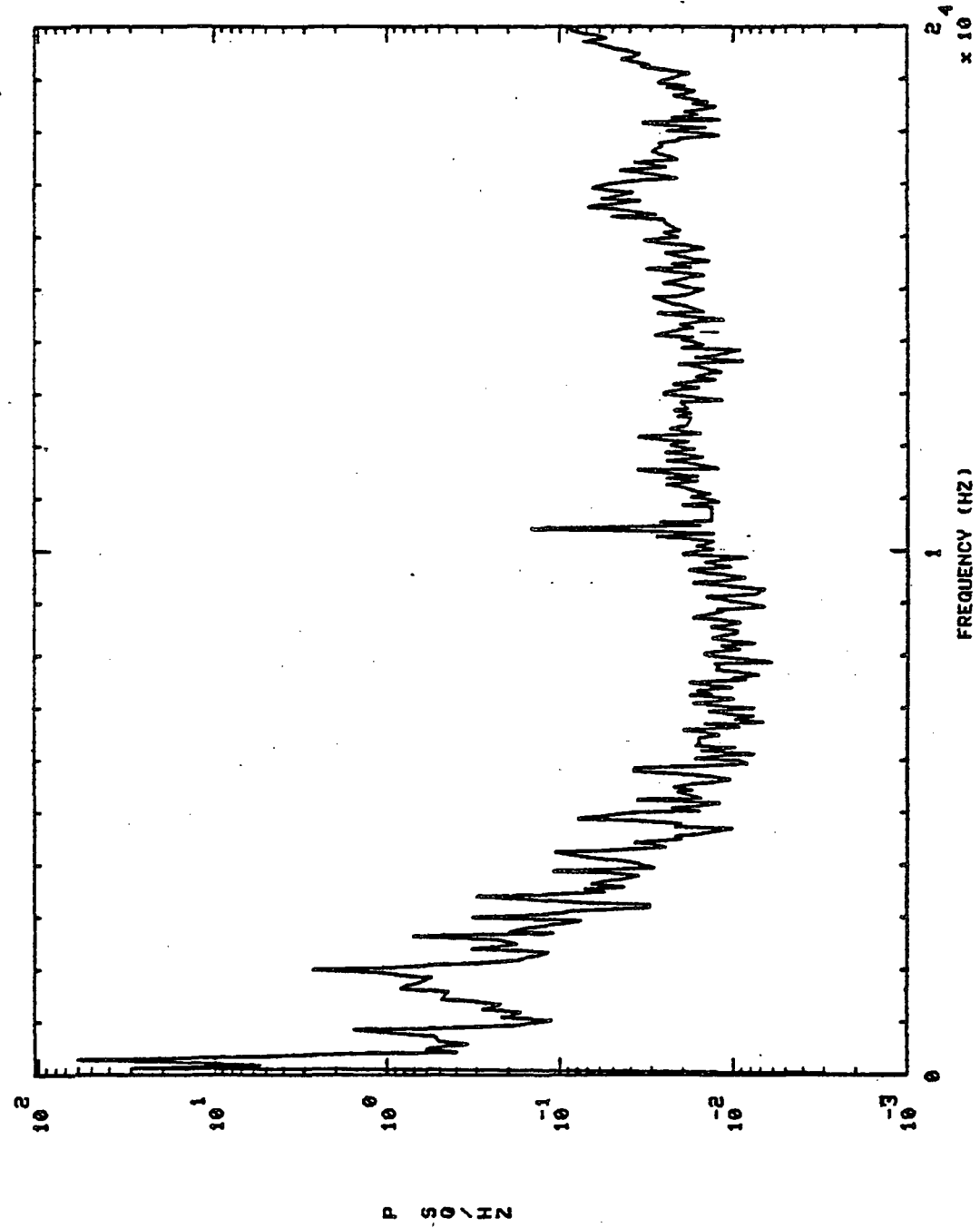
901294 HPOP DS PR S+ 660.01H0,'S

901294 HPOP DS PR

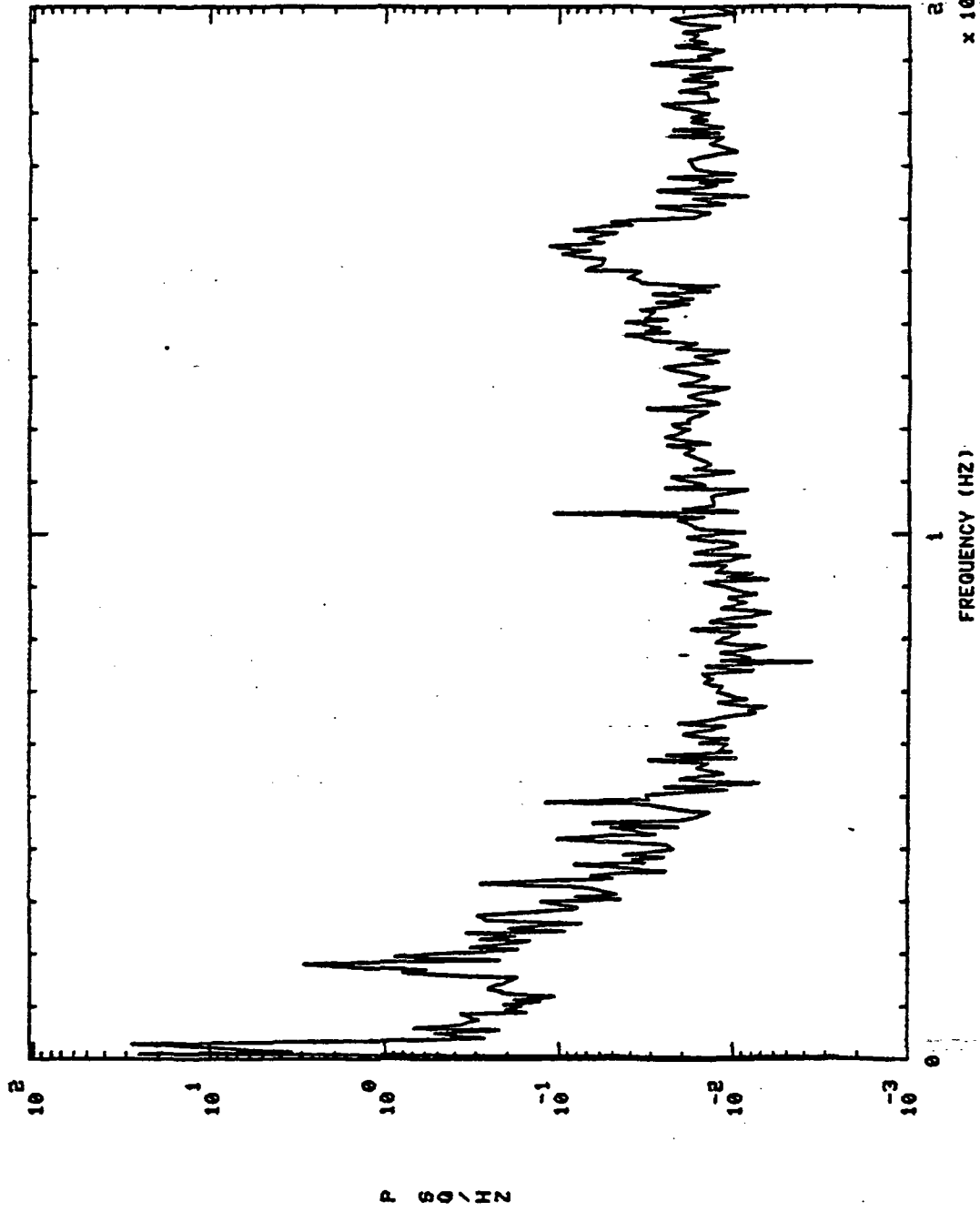


S+ 10.01H0,'S

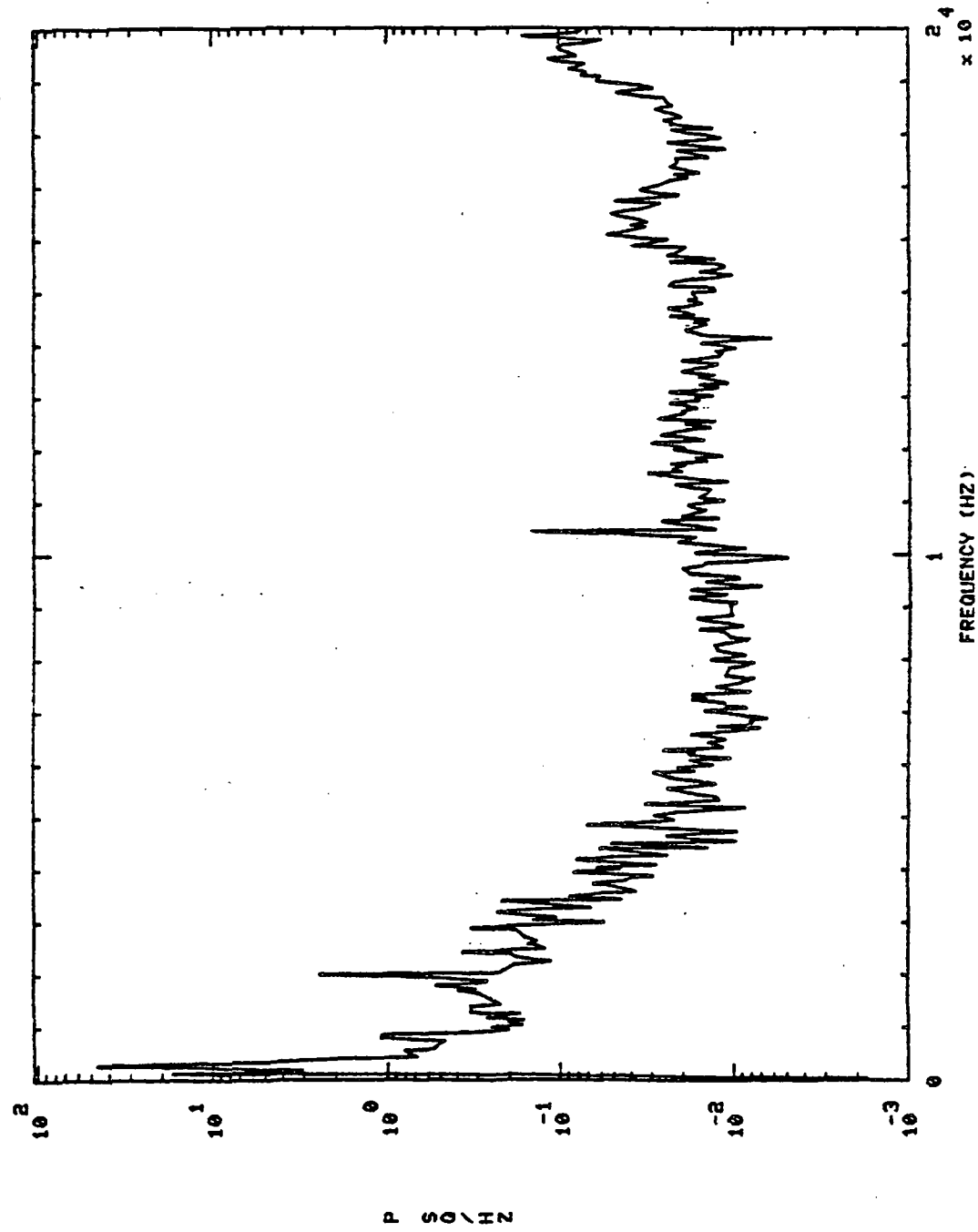
901294 PBP DS PR



901294 PBP DS PR S+ 40.01H0,'S

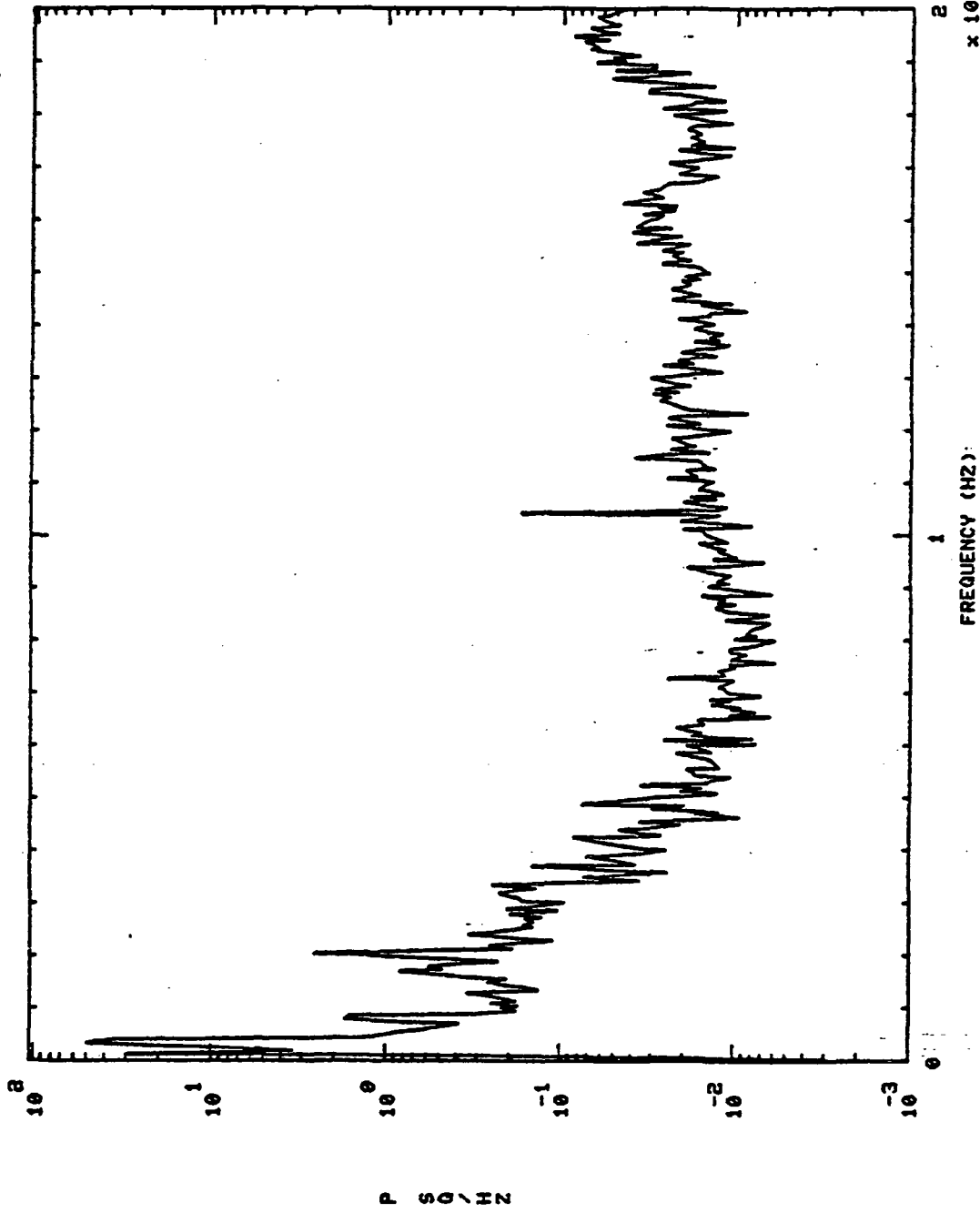


901894 PBP DS PR S+ 100.01H0,'S



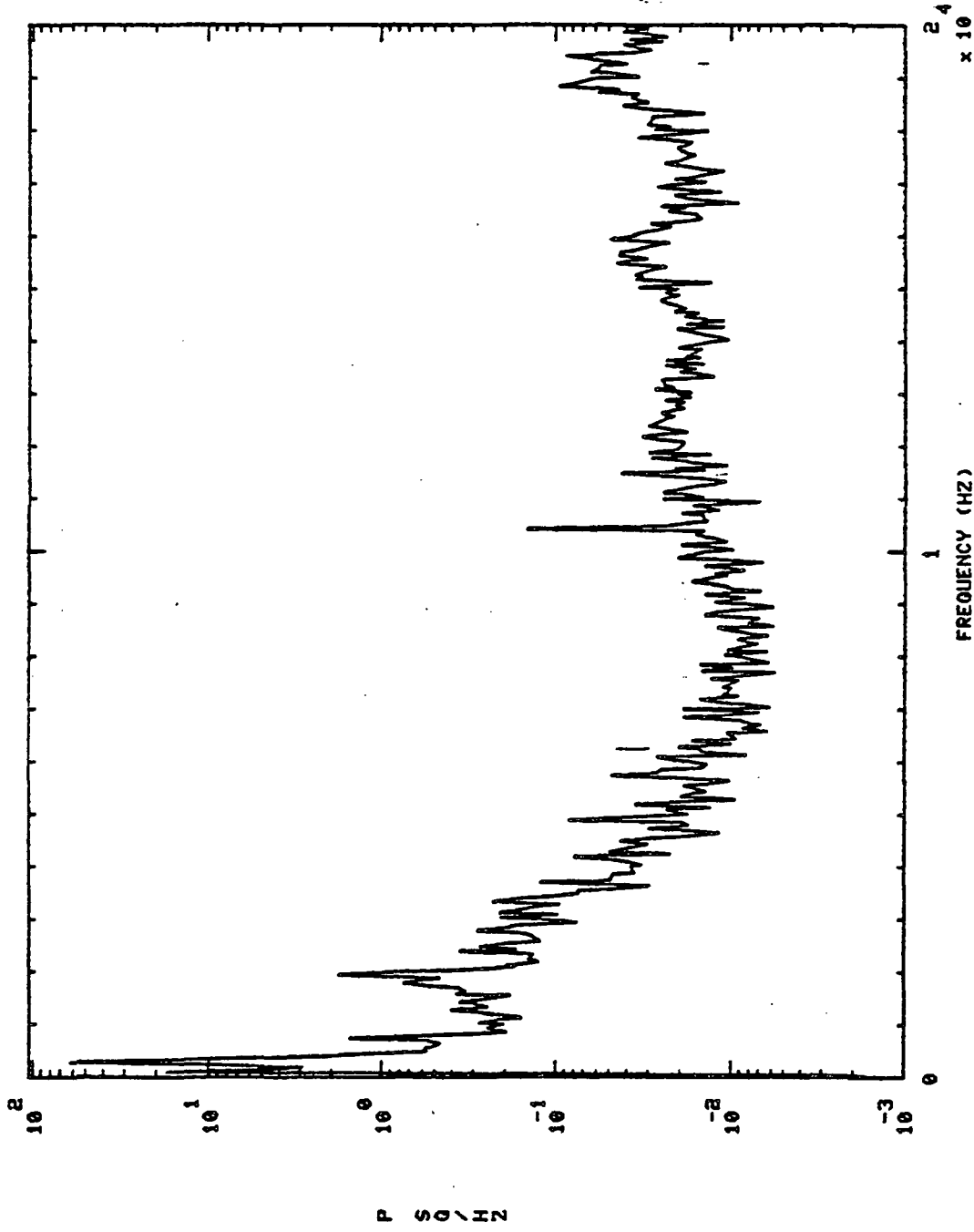
301294 PBP DS PR

S+ 300.0140,'S



S+ 500.01110, 'S

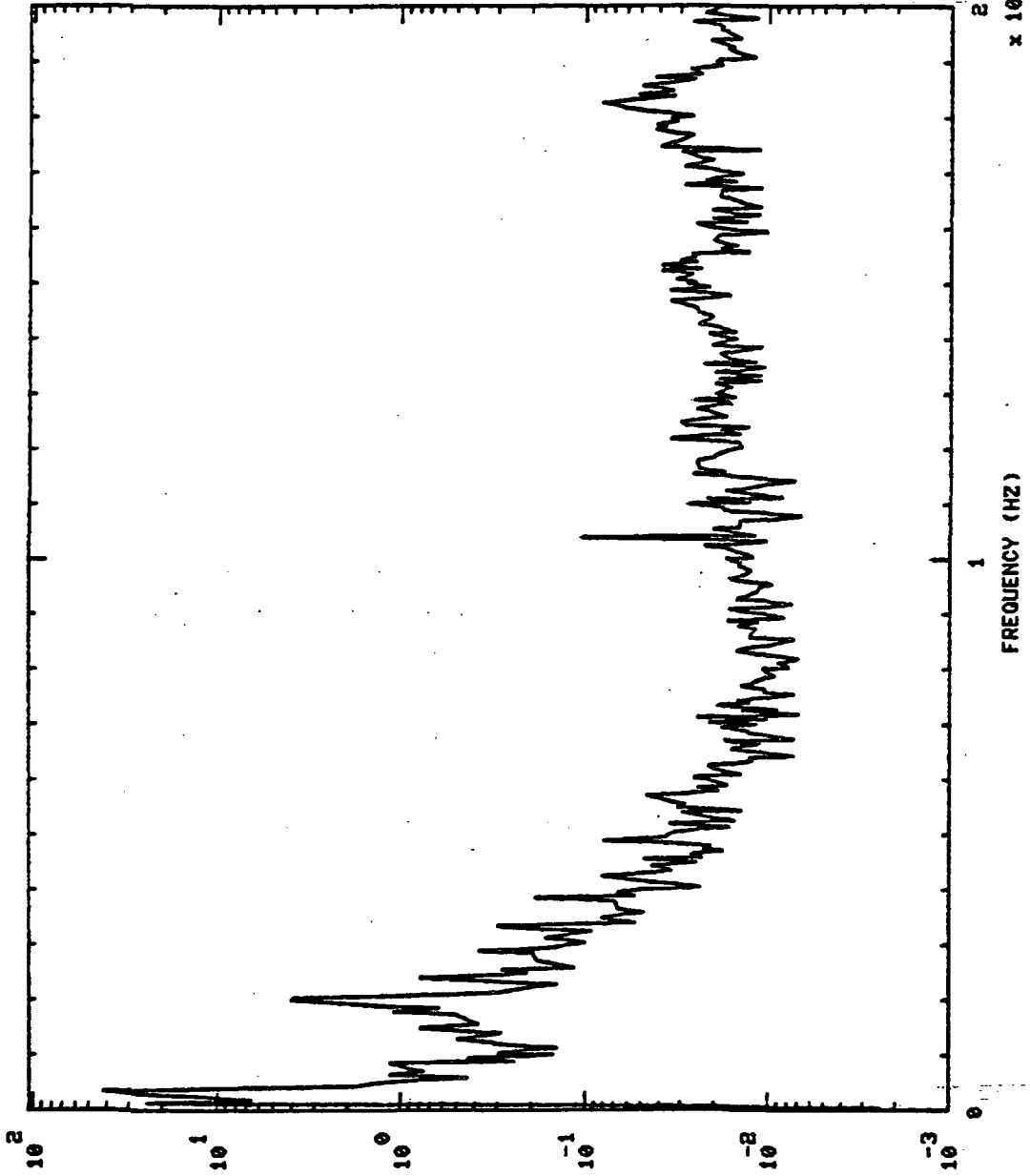
901294 PBP DS PR





S+ 645.01H0.'S

901294 PBP DS PR



P SQ\IN

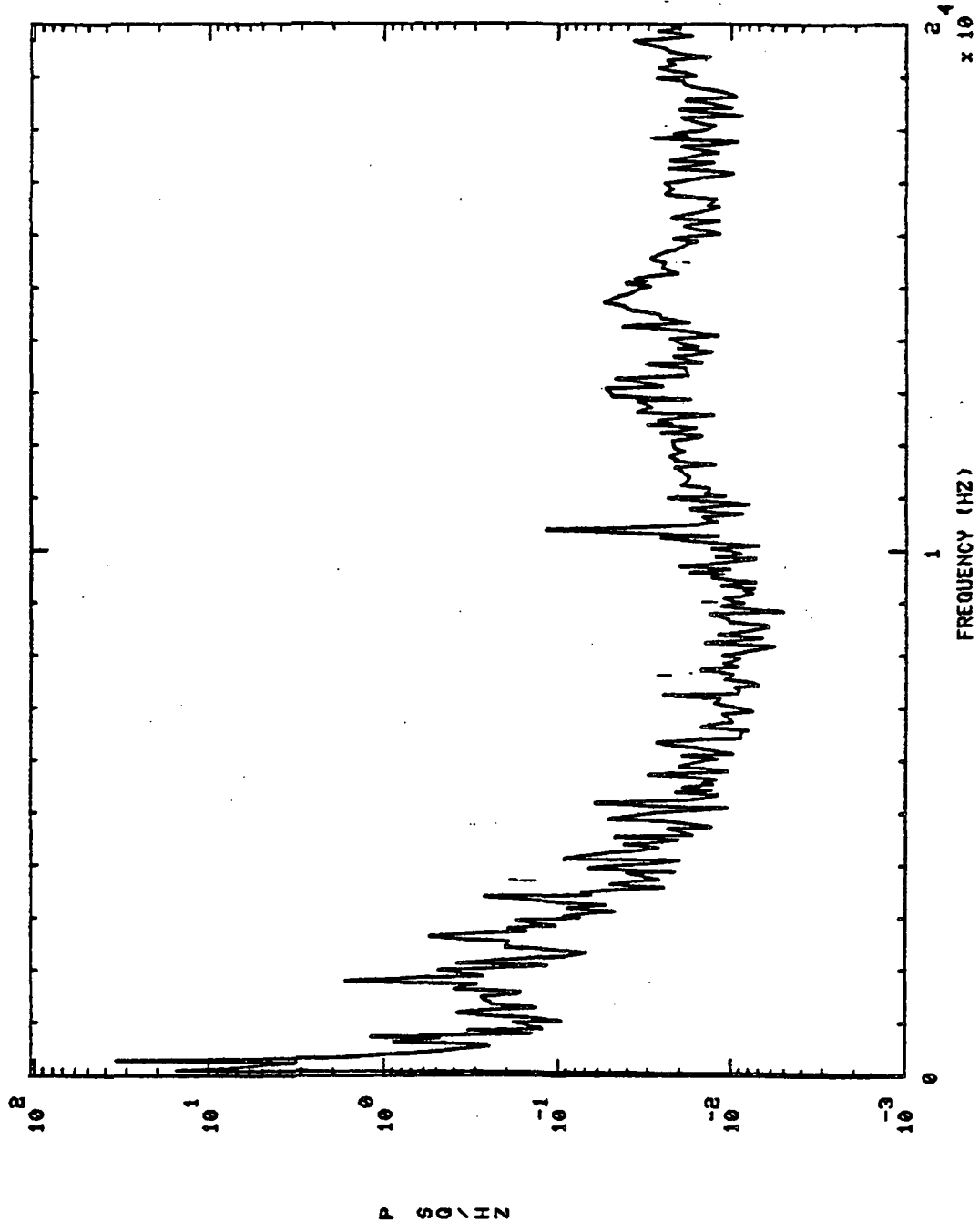
FREQUENCY (HZ)

x 10<sup>4</sup>

ST 660.0140, 'S

PBP DS PR

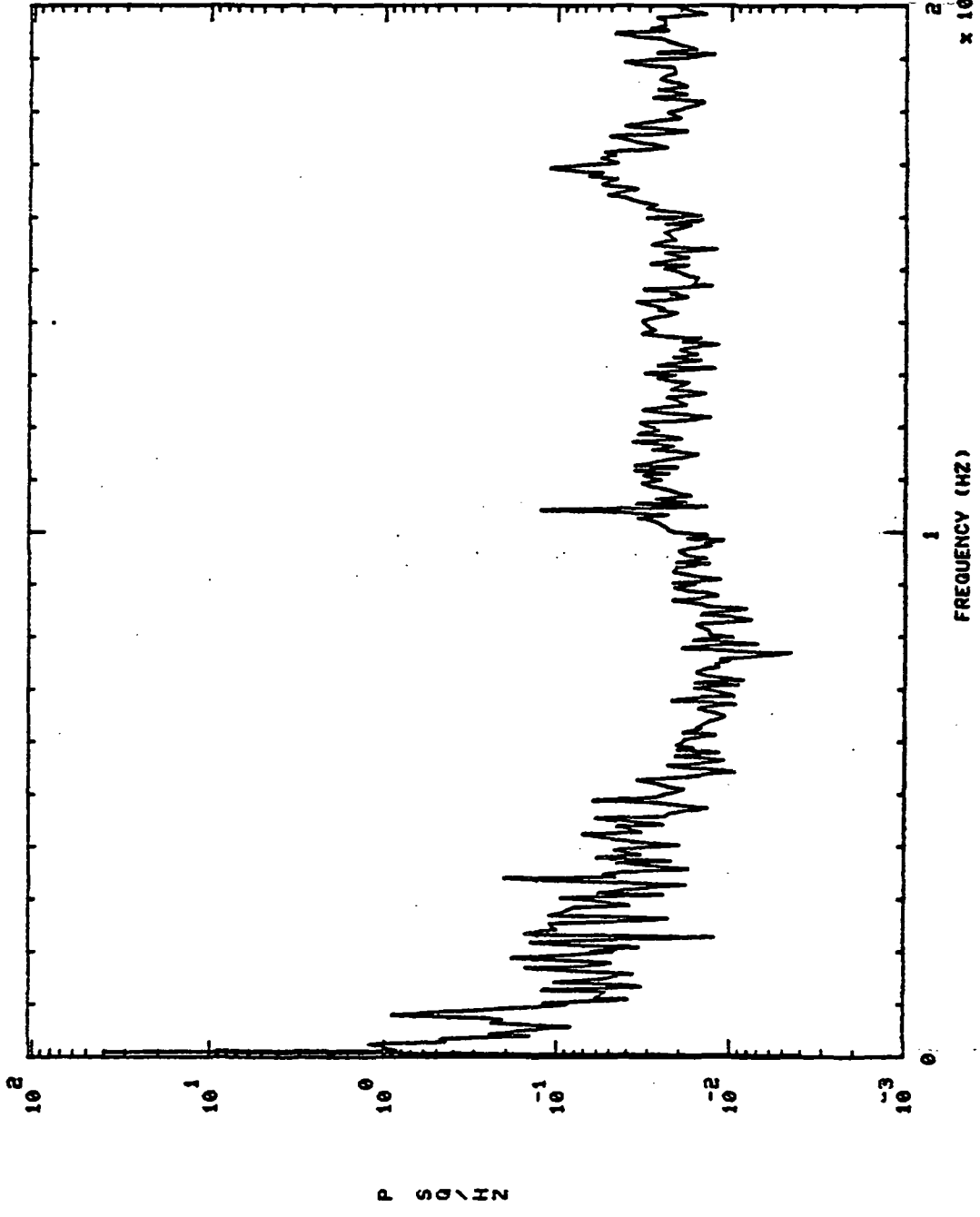
901294



11

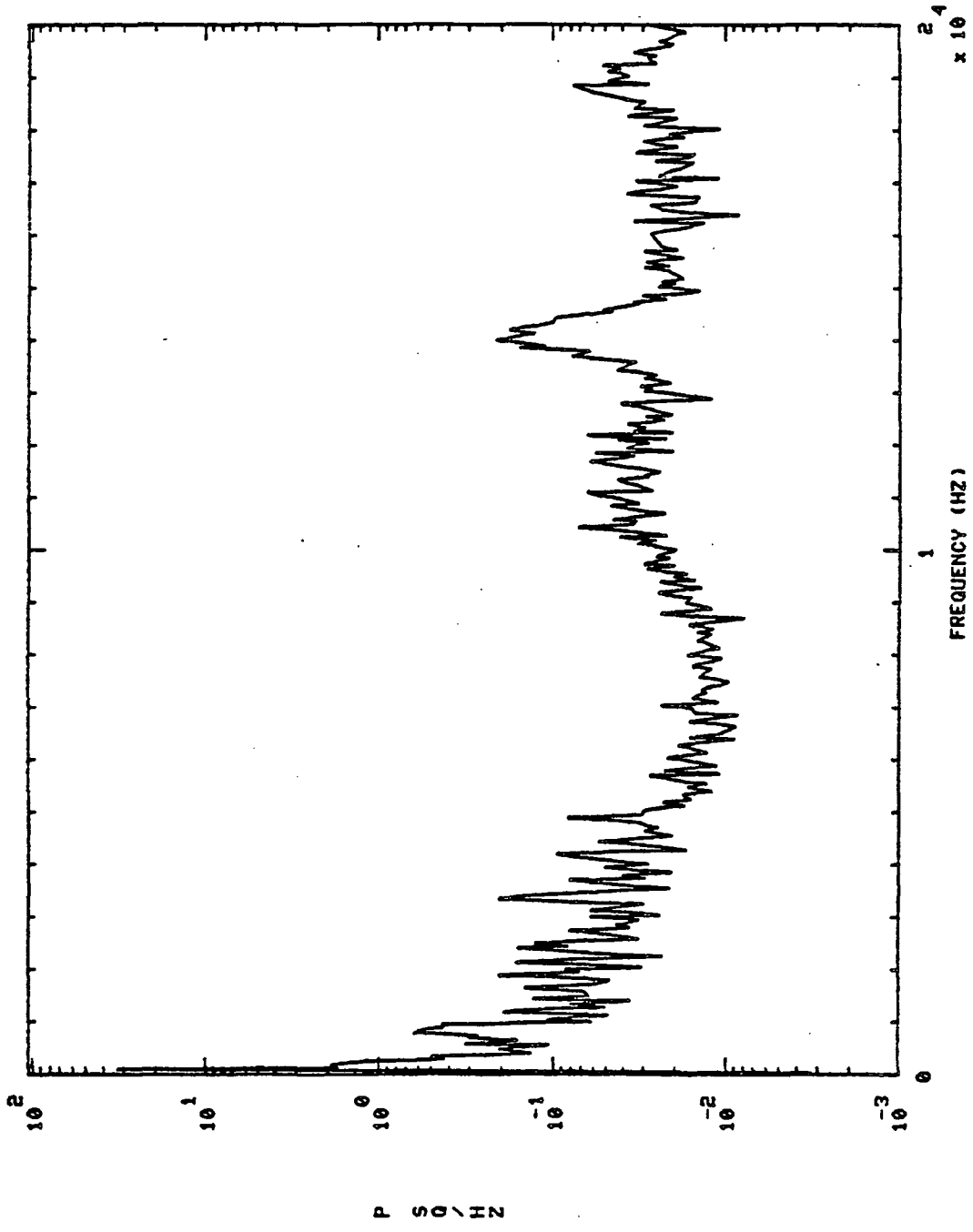
S+ 10.01H0,'S

901294 OPB PL



S+ 40.01H0,'S

901294 OPB PL

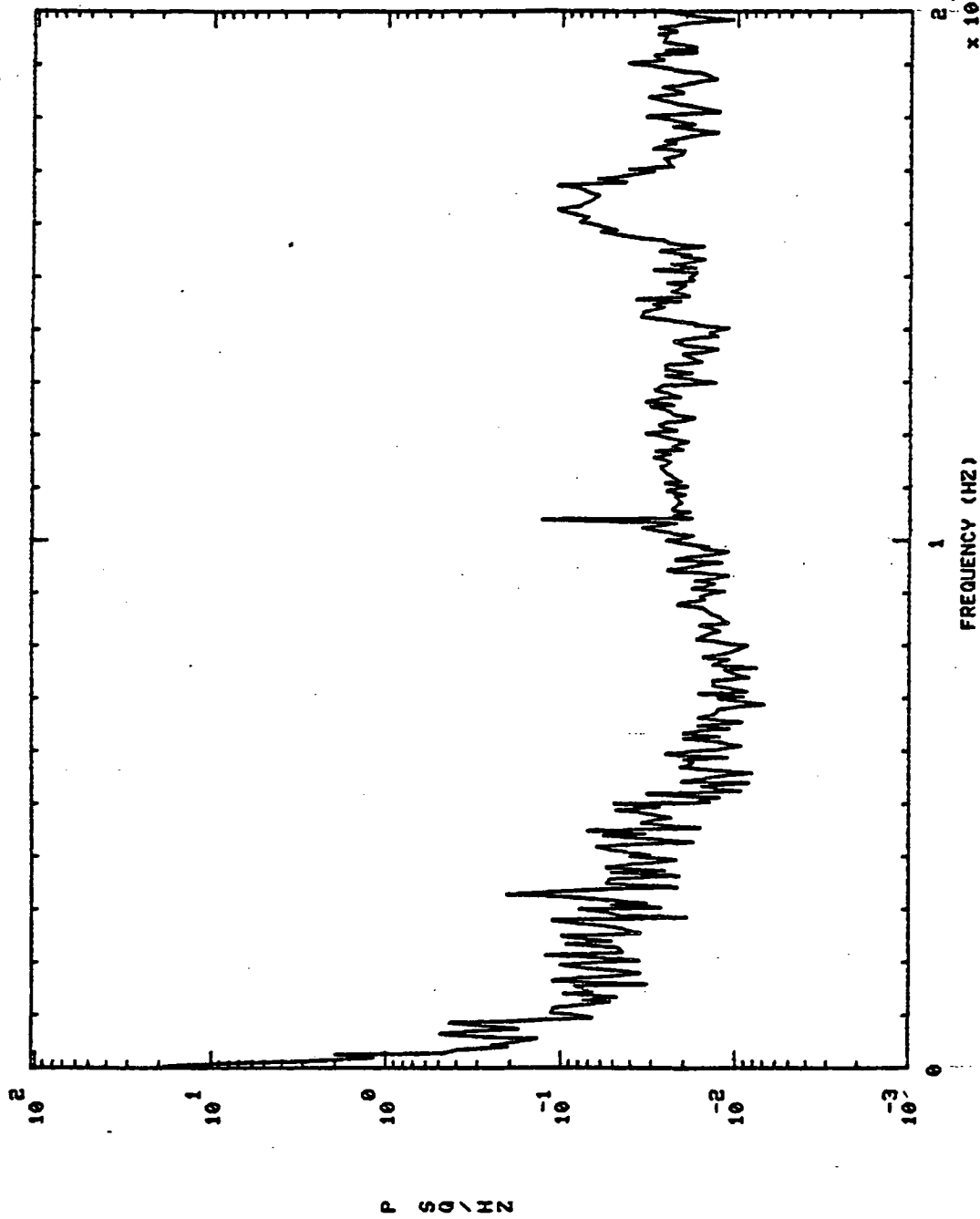


$2.4$   
 $\times 10^4$

FREQUENCY (HZ)

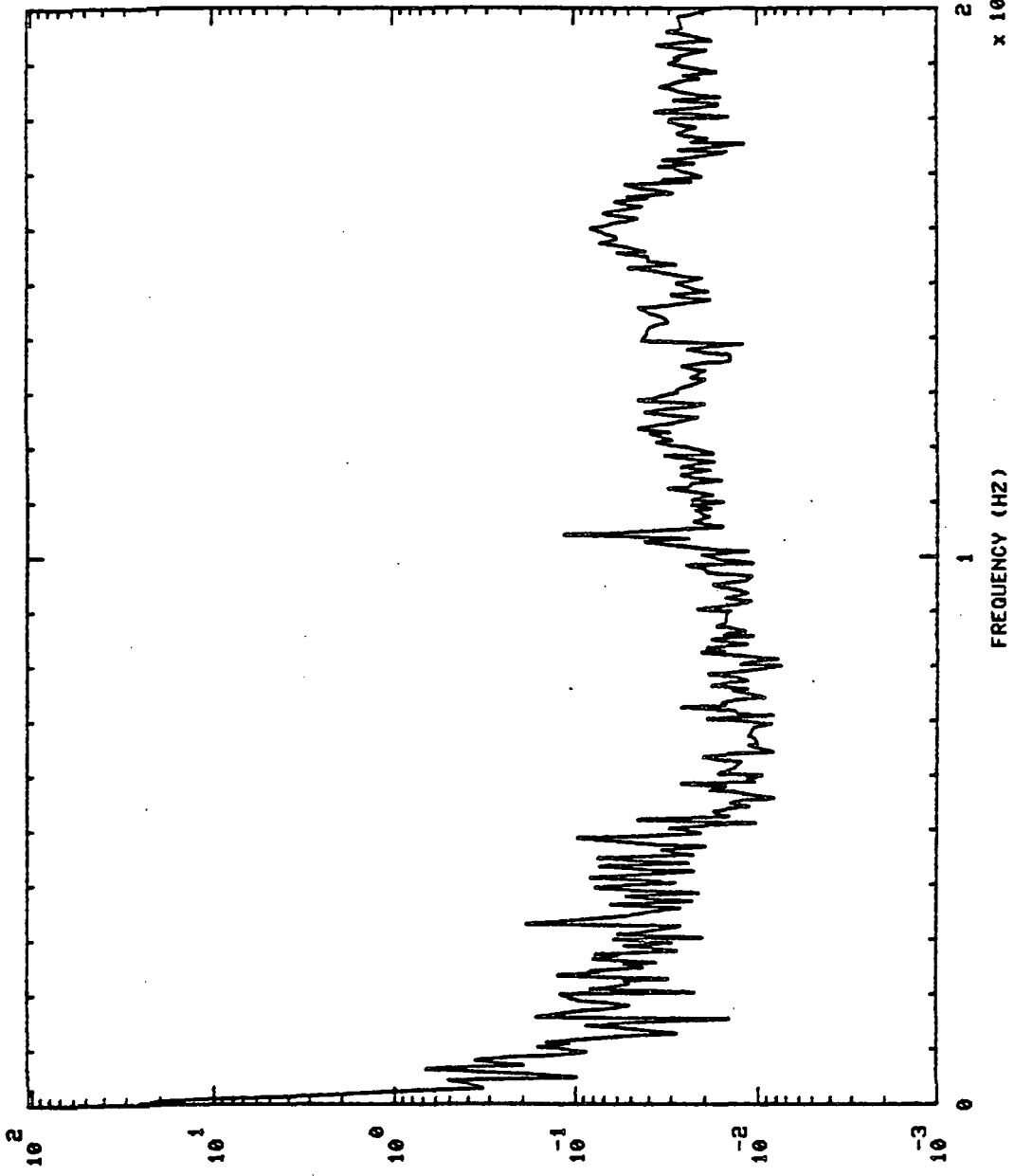
901294 OPB PL

S+ 100.01H0,'S



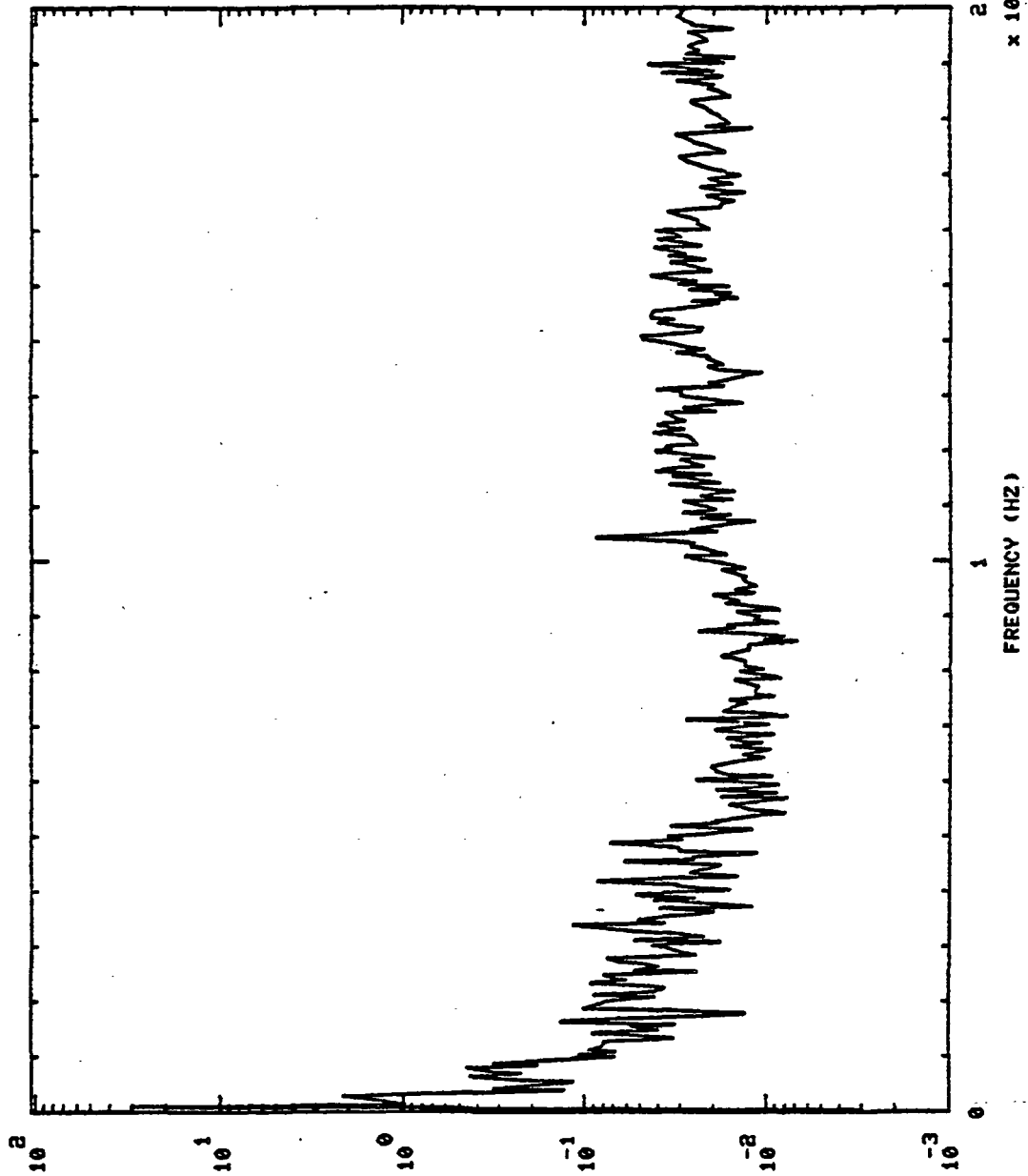
S+ 300.01H0,'S

901294 OPB PL



S+ 500.01H0,'S

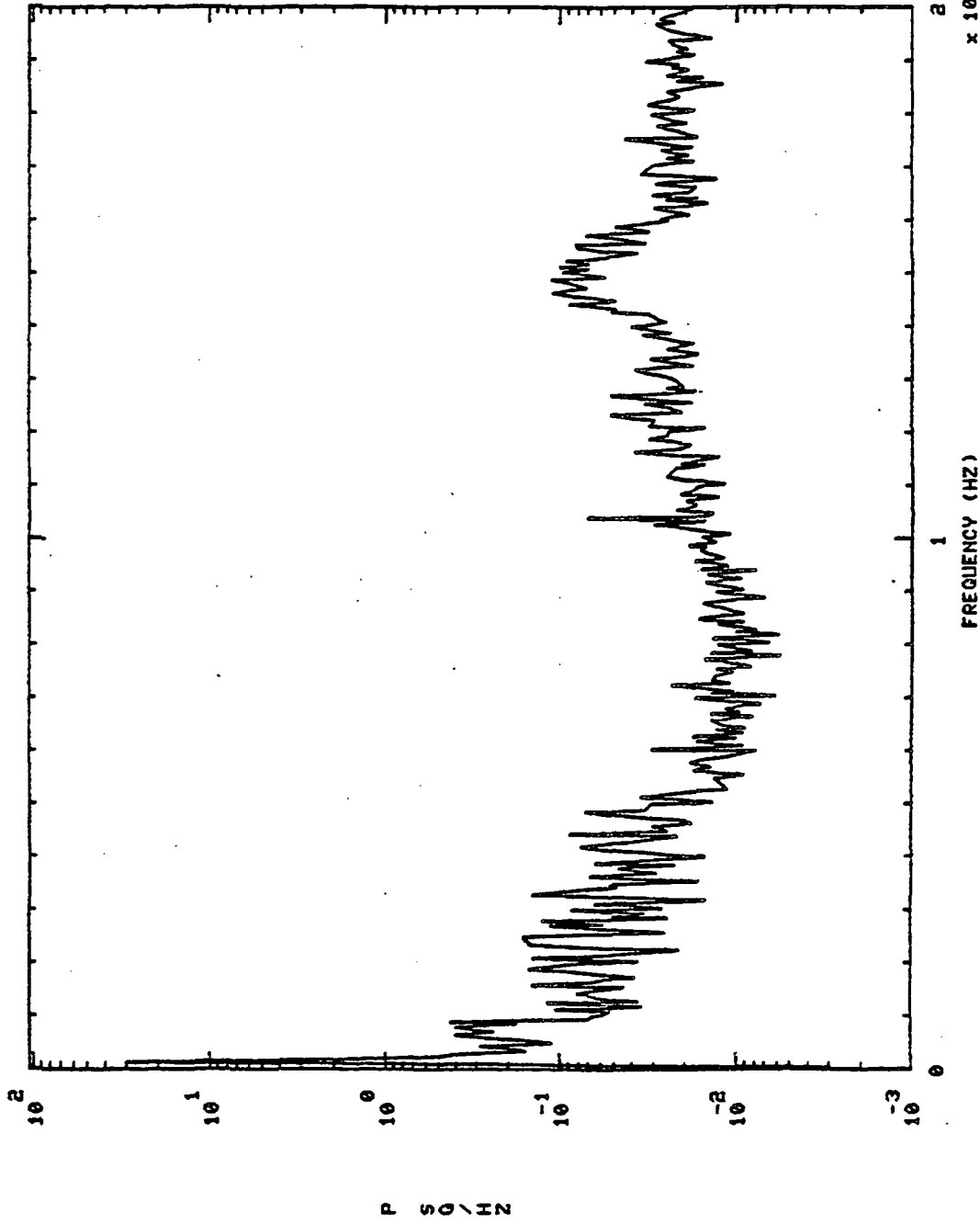
901294 OPB PL



P S O \ H N

S+ 645.0140,'S

901294 OPB PL



$10^4$

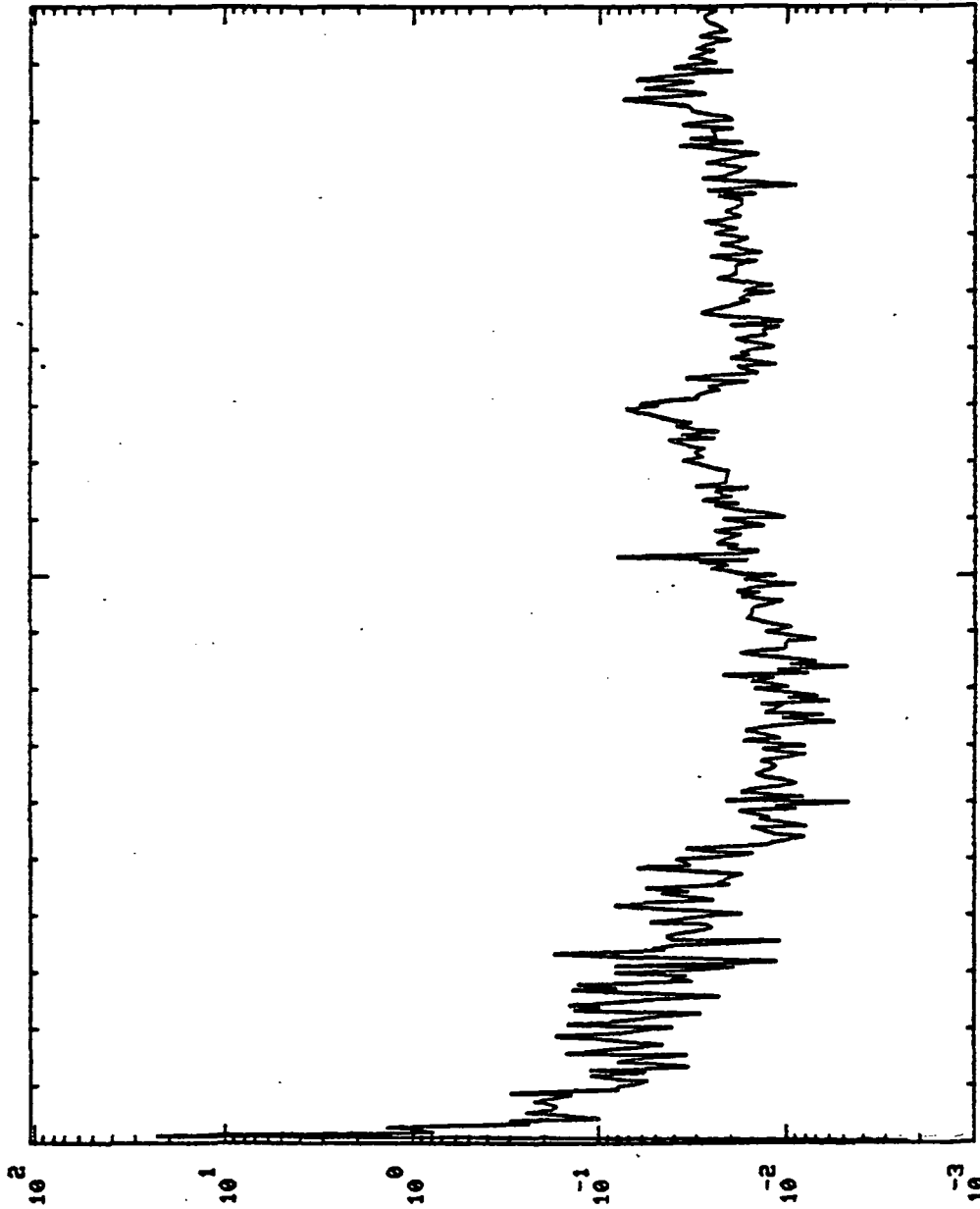
FREQUENCY (HZ)

0



S+ 660.0140,'S

901294 OPS PL



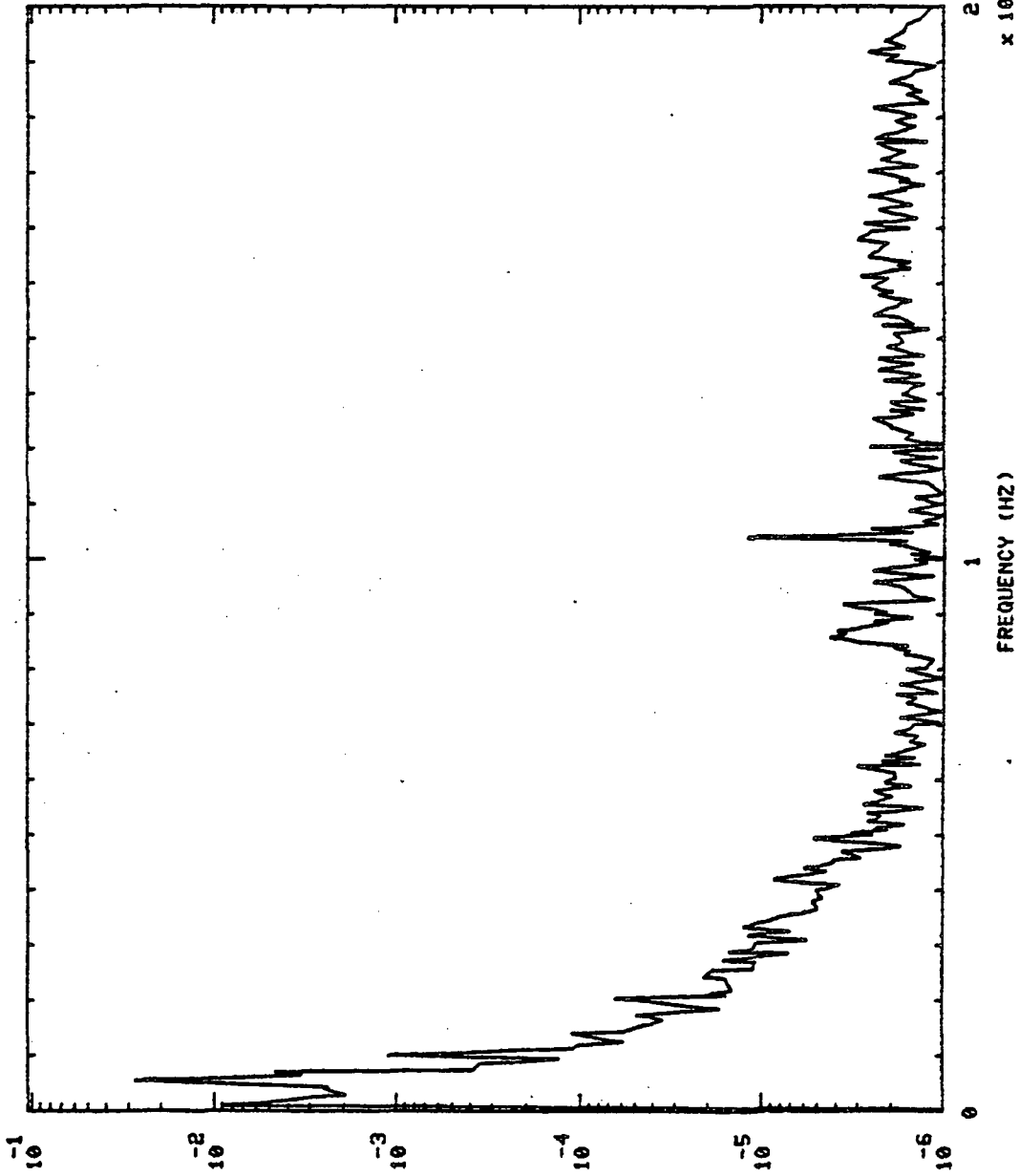
P S G \ H N

FREQUENCY (HZ)

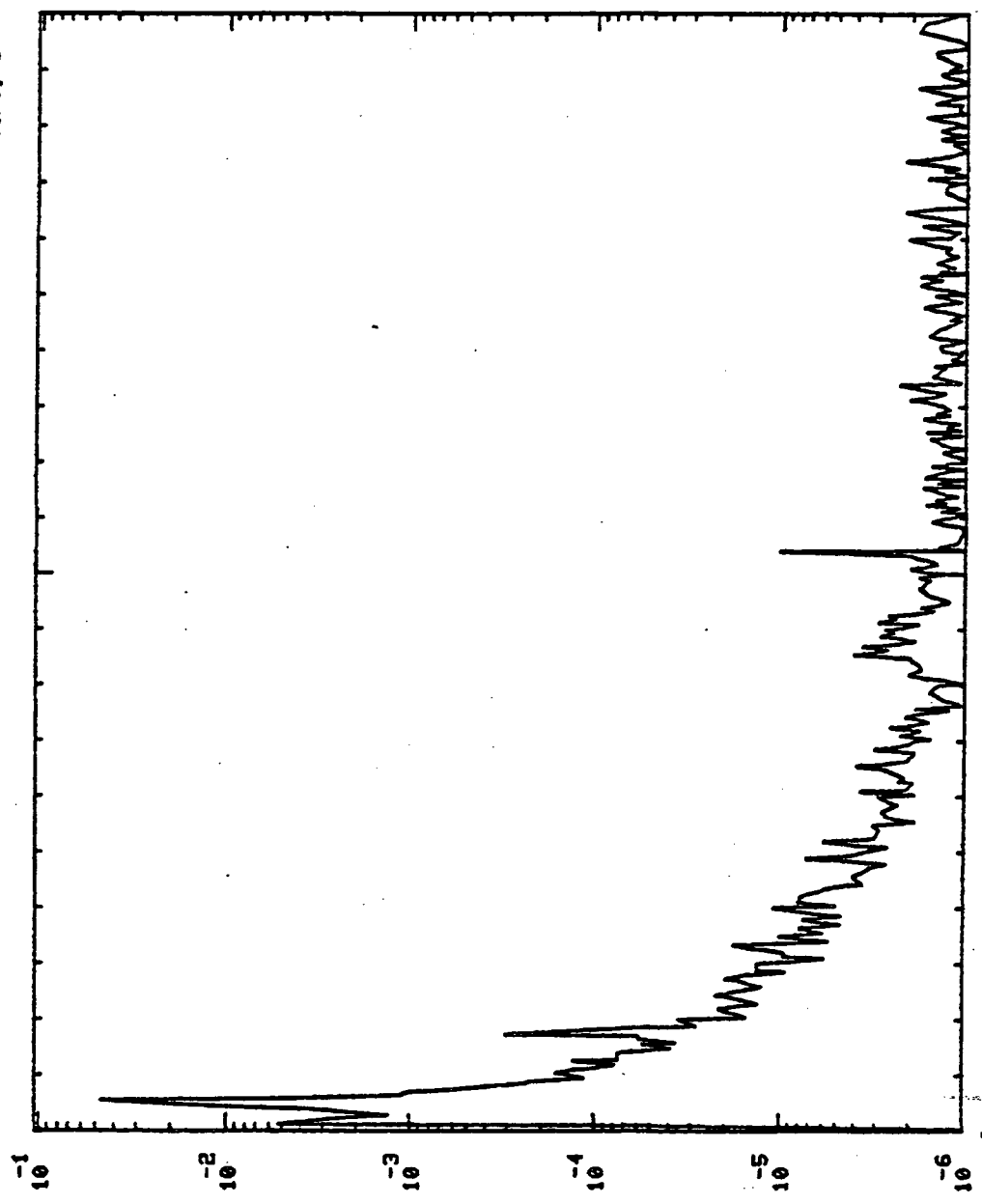
x 10<sup>4</sup>

S+ 10.01H0,'S

901294 HPOP IN PR



901294 HPOP IN PR S+ 40.01H0,'S

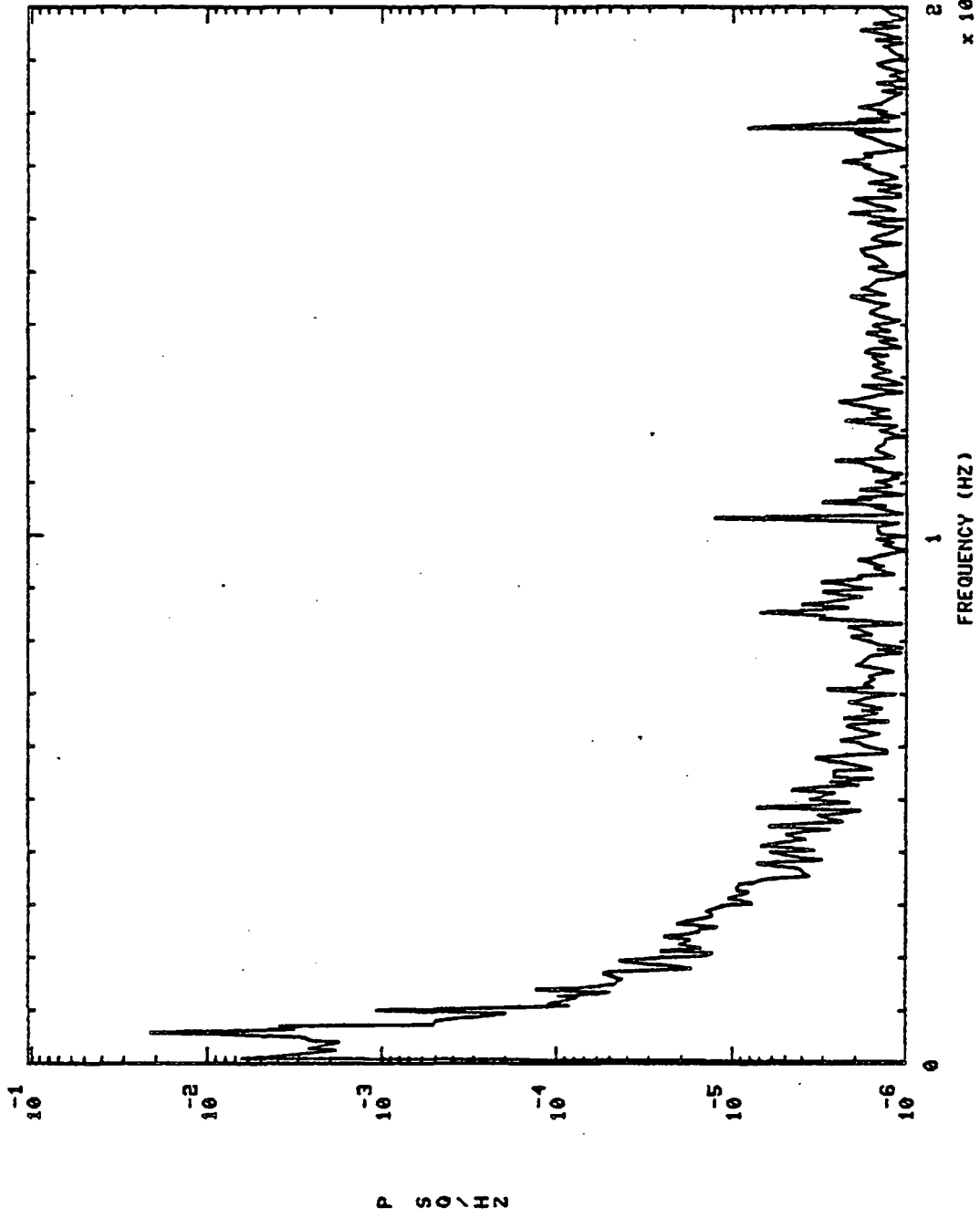


P SQ/HZ

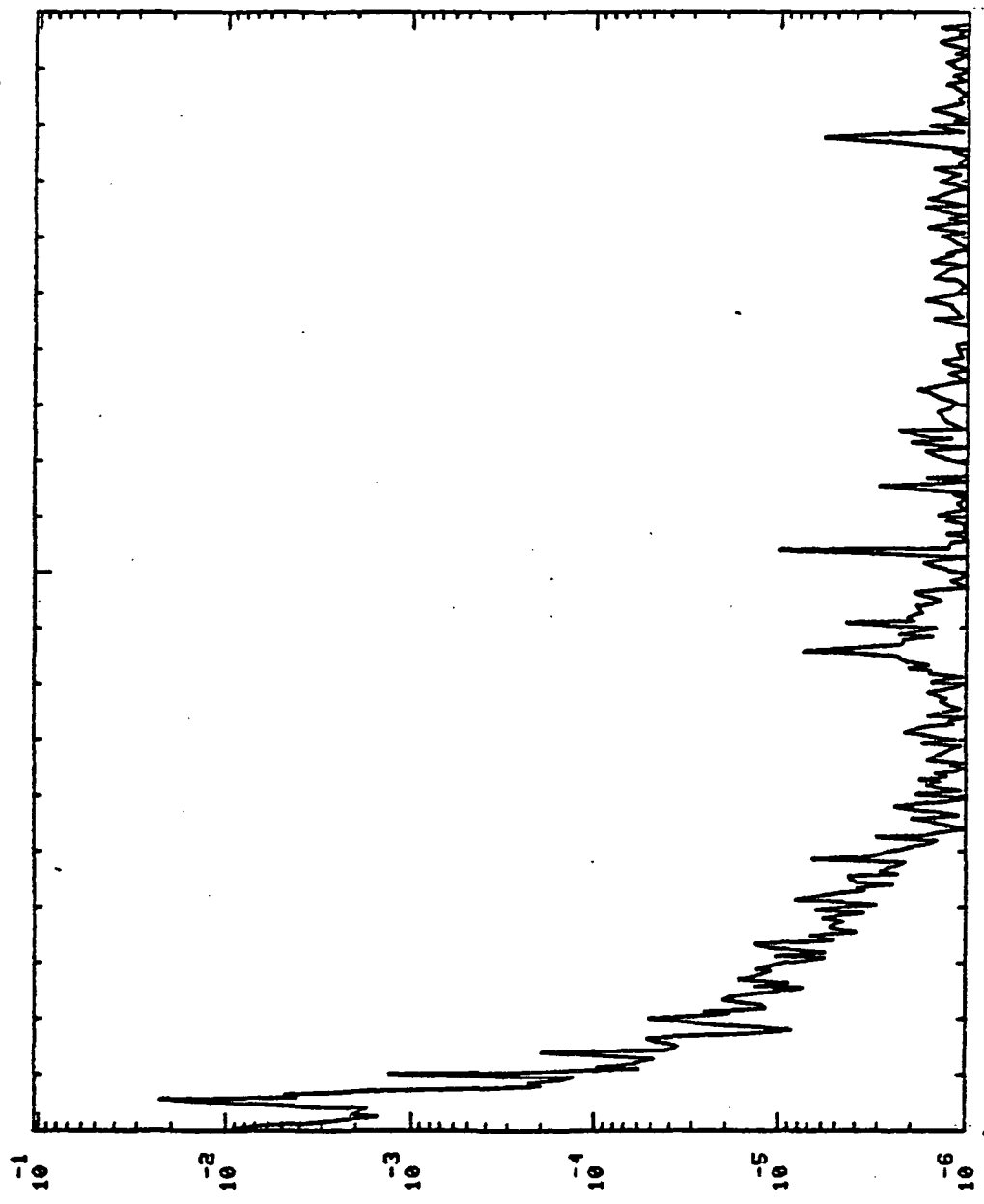
FREQUENCY (HZ) x 10<sup>4</sup>

S+ 100.01H0,'S

901294 HPOP IN PR



901294 HPOP IN PR S+ 300.01H0,'S



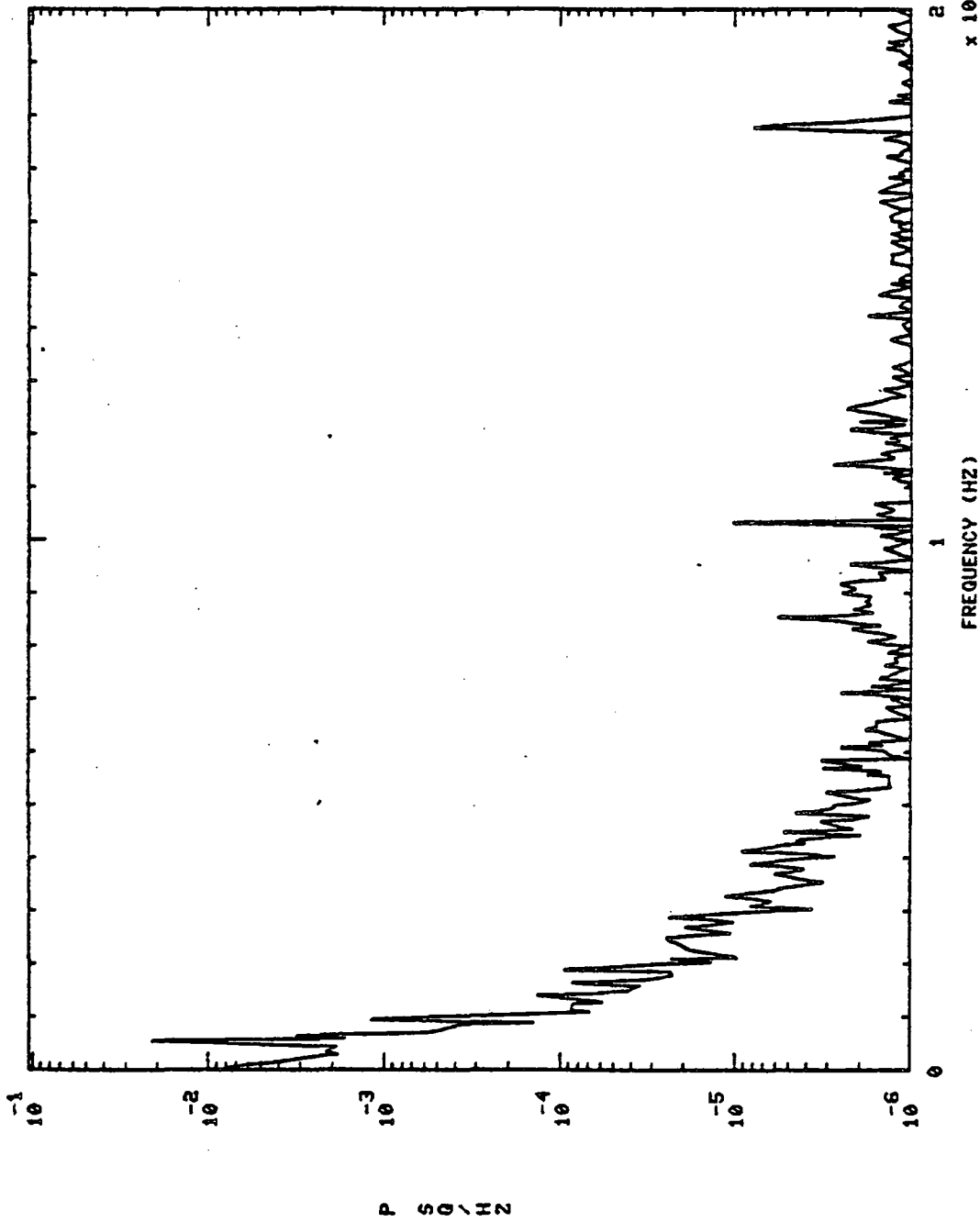
PSD / HZ

2.4  
x 10<sup>4</sup>

1  
FREQUENCY (HZ)

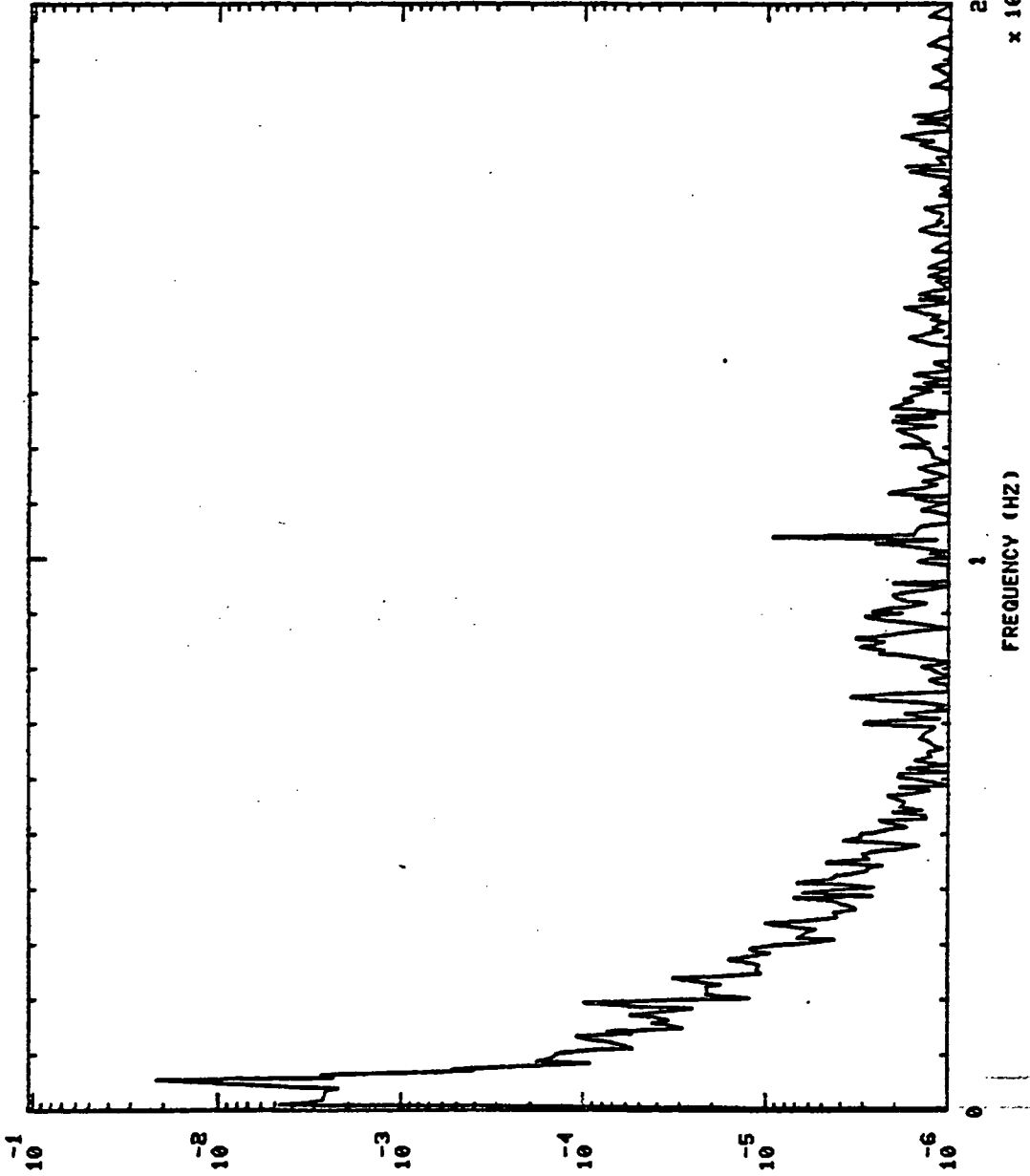
S+ 500.01H0,'S

901294 HPOP IN PR



S+ 645.01H0,'S

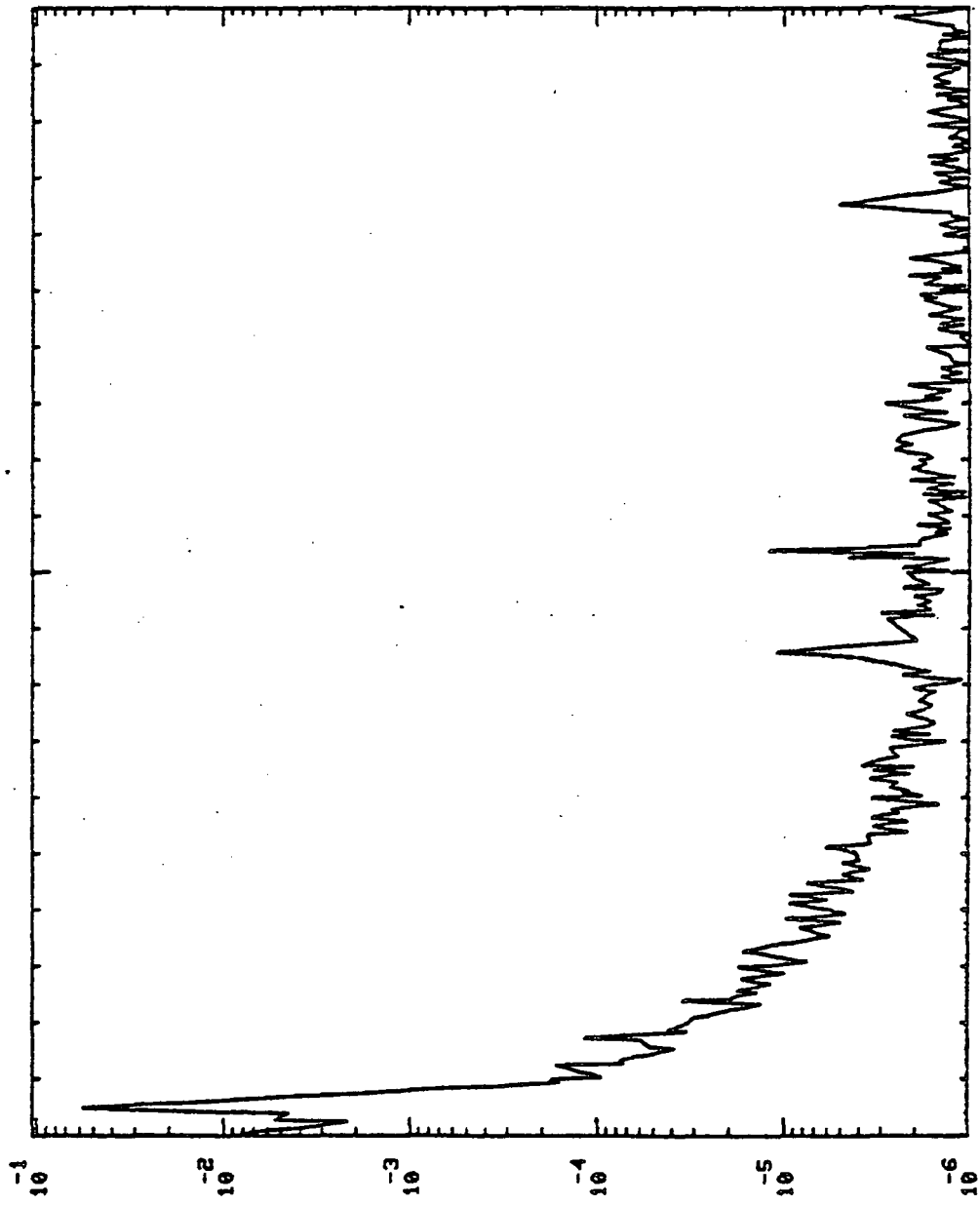
901294 HPOP IN PR



P SC/IN

S+ 660.01H0,'S

901294 HPDP IN PR



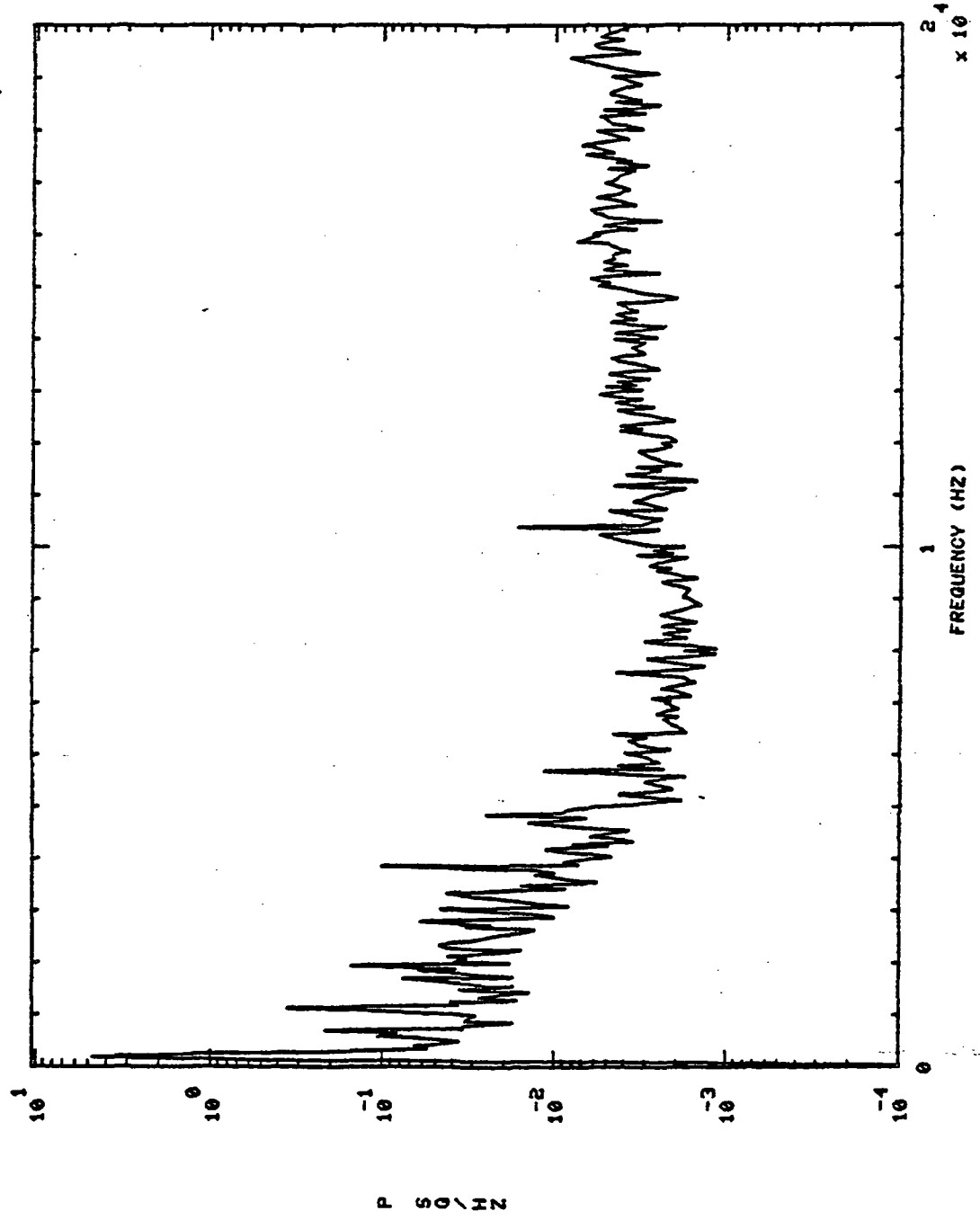
2.4  
x 10<sup>4</sup>  
FREQUENCY (HZ)

P S/H

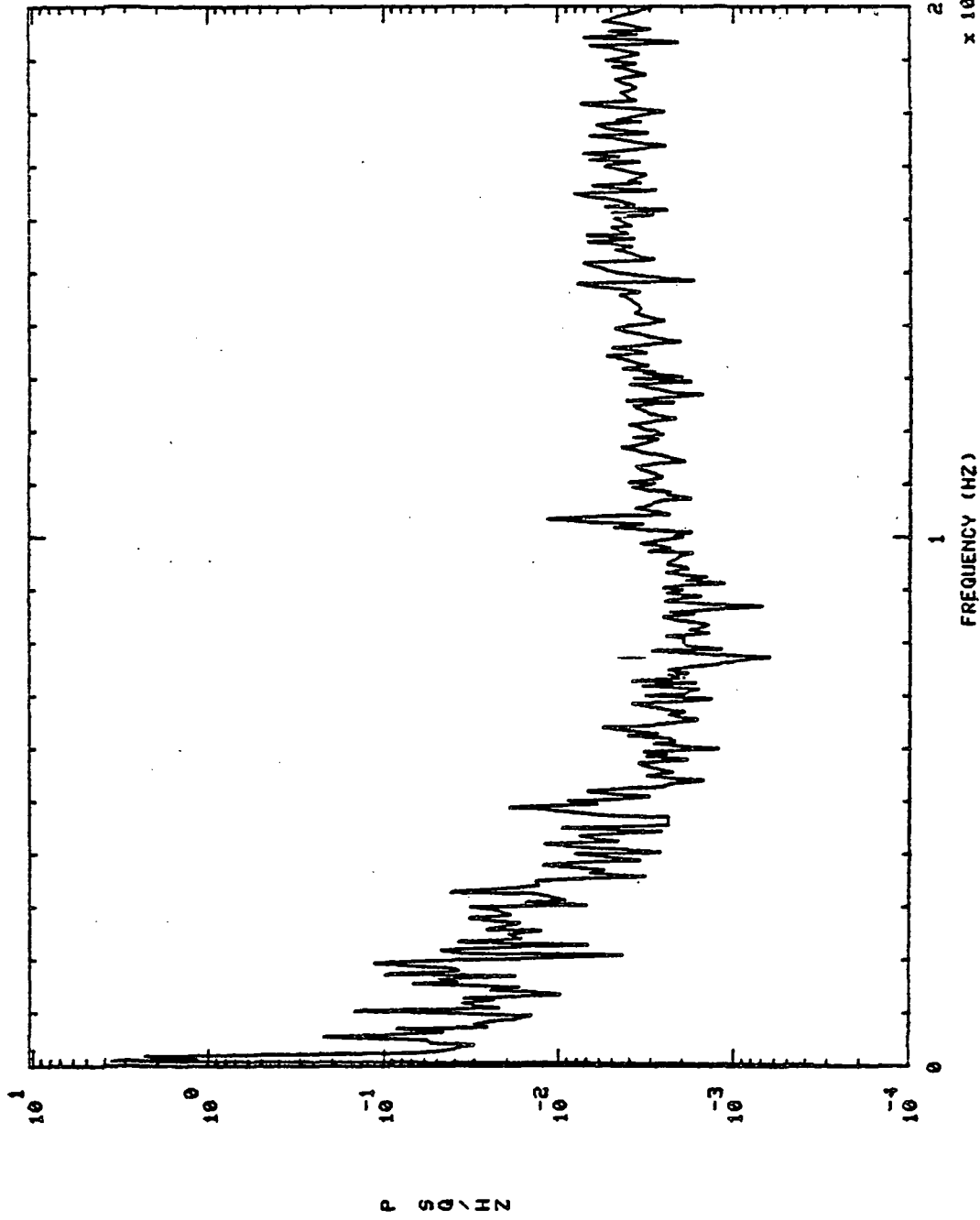


901295 HPOP DS PR ST 20.01H0,'S

901295 HPOP DS PR

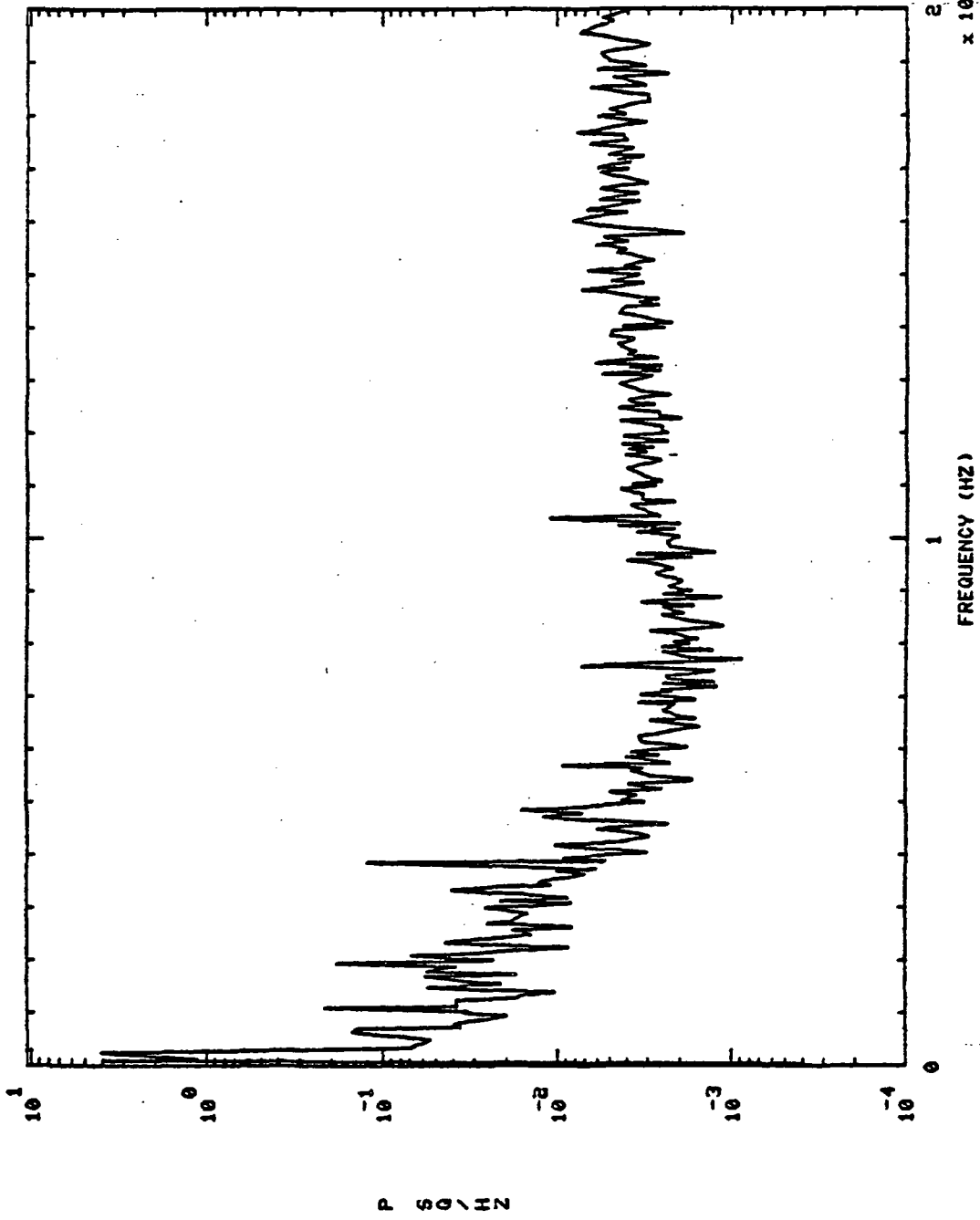


901295 HPOP DS PR 5+ 45.01H0,'S

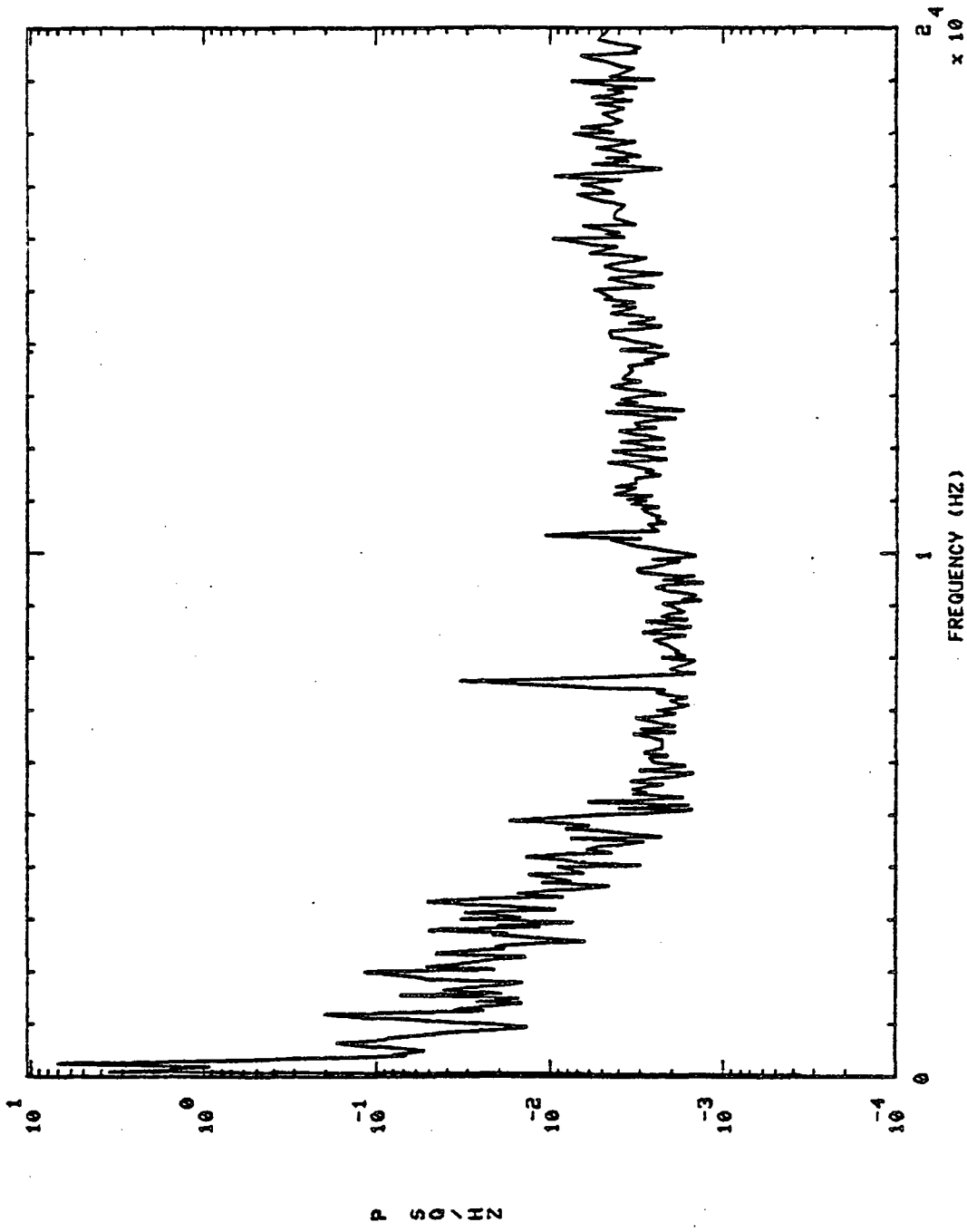


S+ 100.01H0.'S

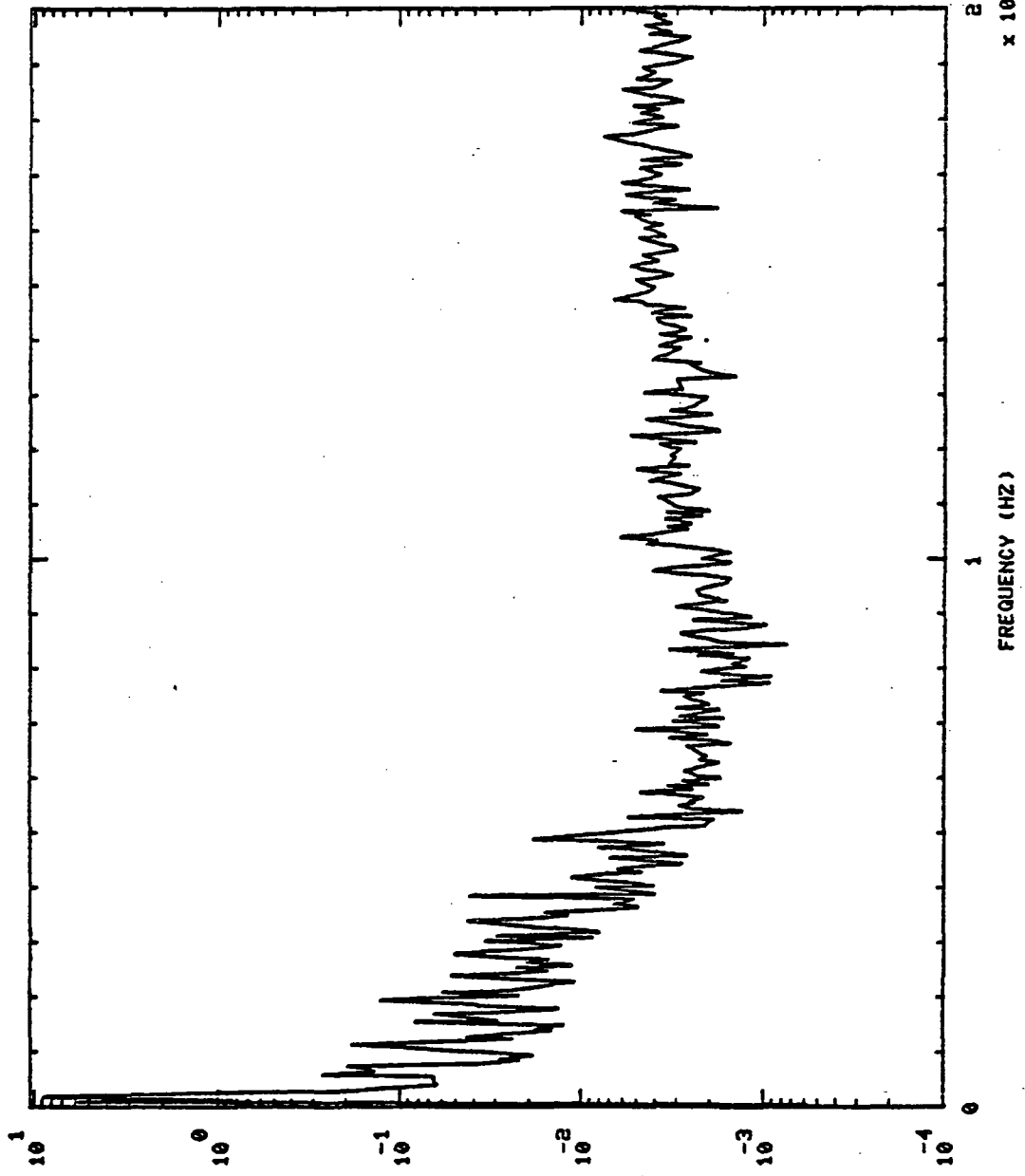
901295 HPOP D5 PR



901295 HPOP DS PR S+ 300.01H0,'S



901295 HPOP DS PR S+ 450.01H0.'S

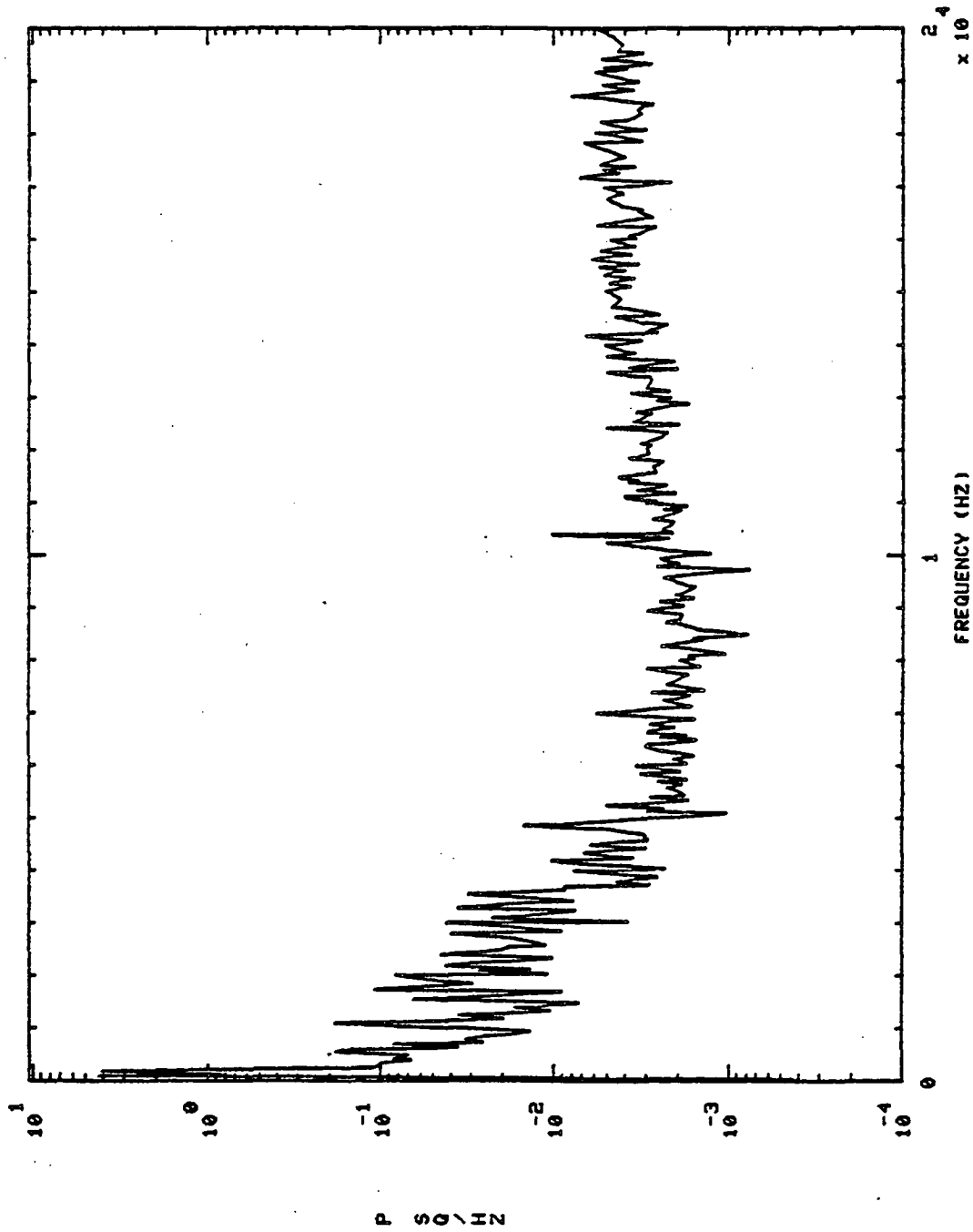


P S D / HZ

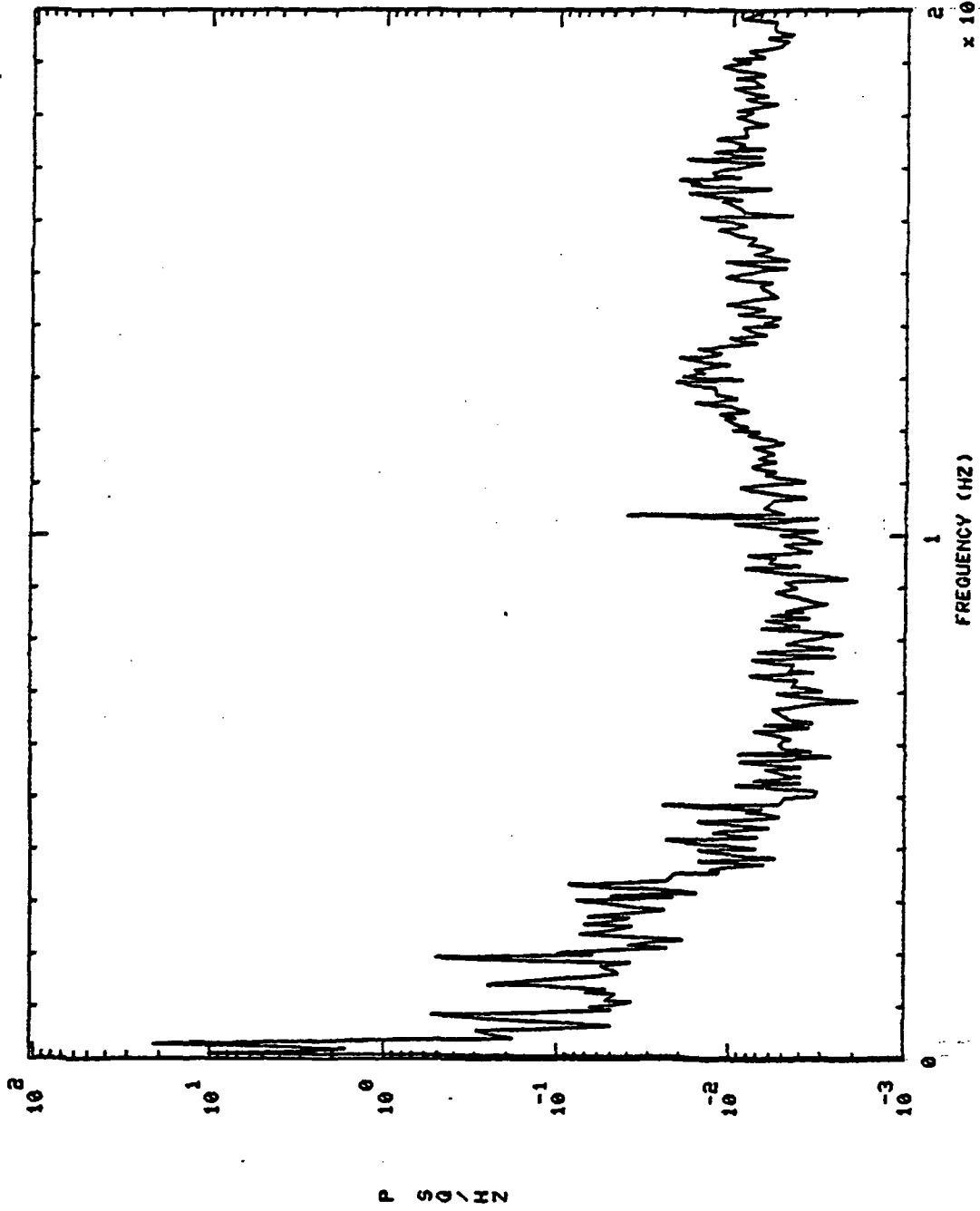
FREQUENCY (HZ) x 10<sup>4</sup>

S+ 500.01H0,'S

901295 HPOP DS PR

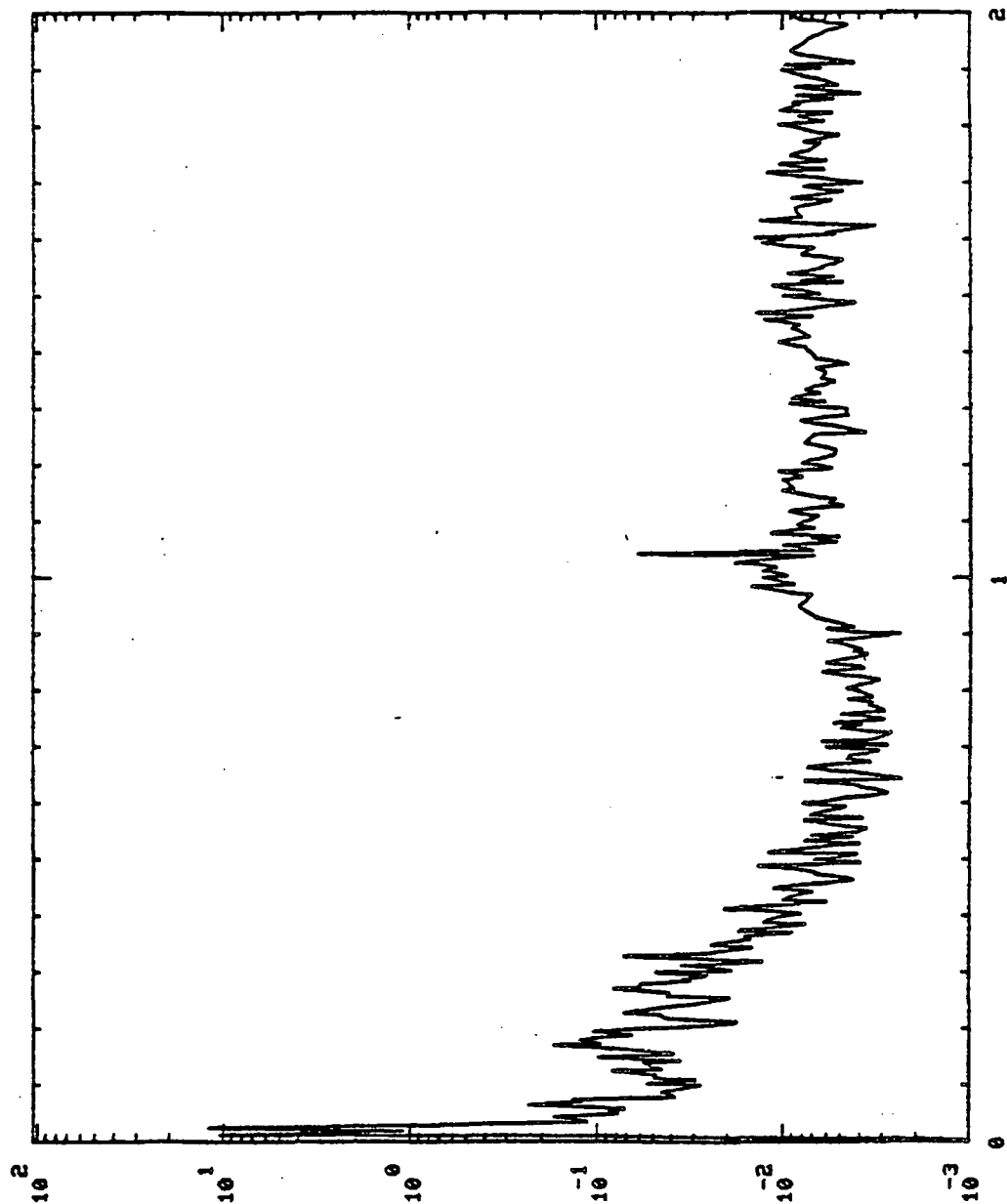


901295 PBP DS PR S+ 20.01H0,'S



S+ 45.01H0.'S

901295 PBP DS PR



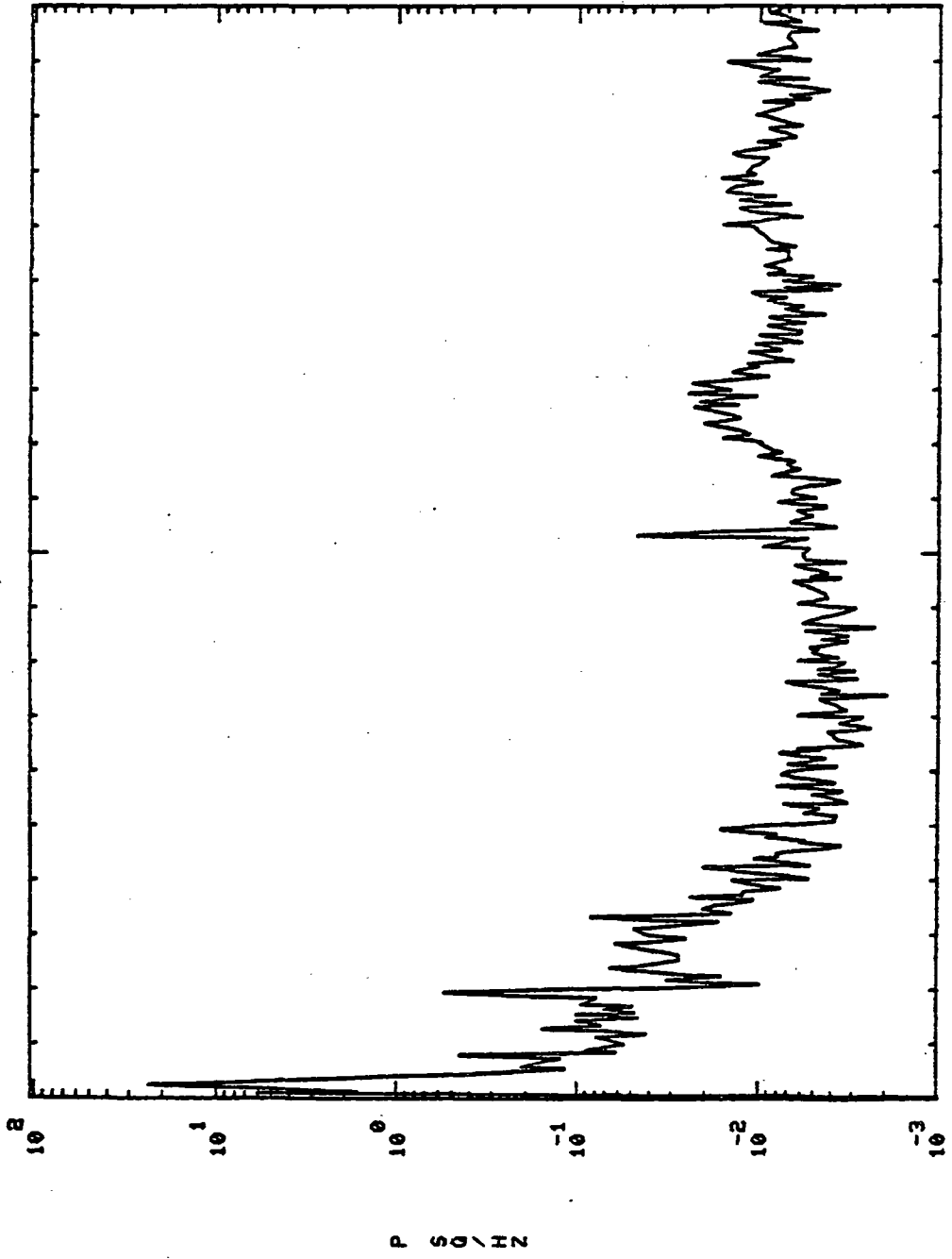
P SQ IN

FREQUENCY (HZ)

$\times 10^4$



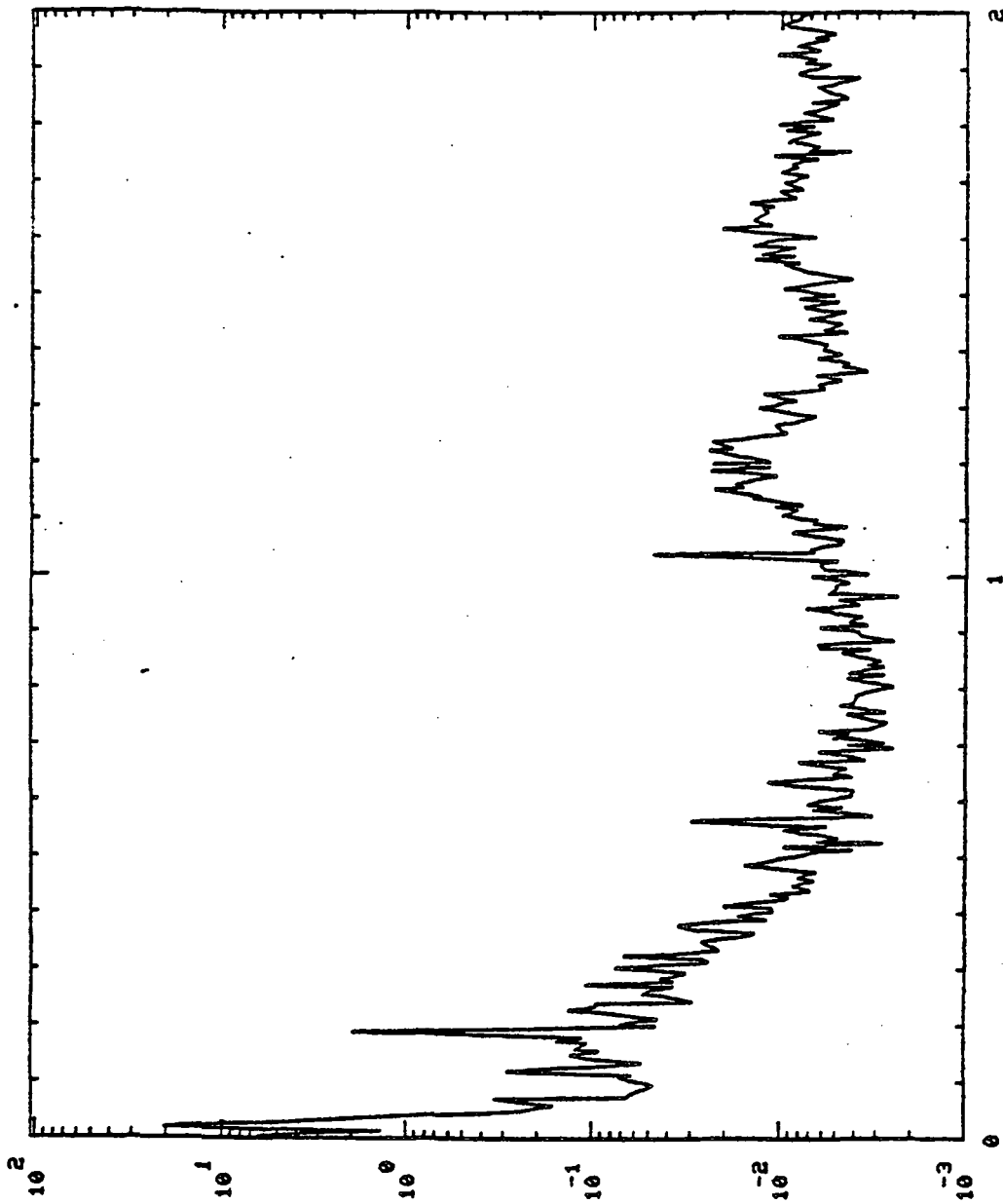
901295 PBP DS PR S+ 100.0140,'S



1  
FREQUENCY (HZ)  
2.4  
x 10<sup>1</sup>

S+ 300.01H0,'S

901295 P8P DS PR

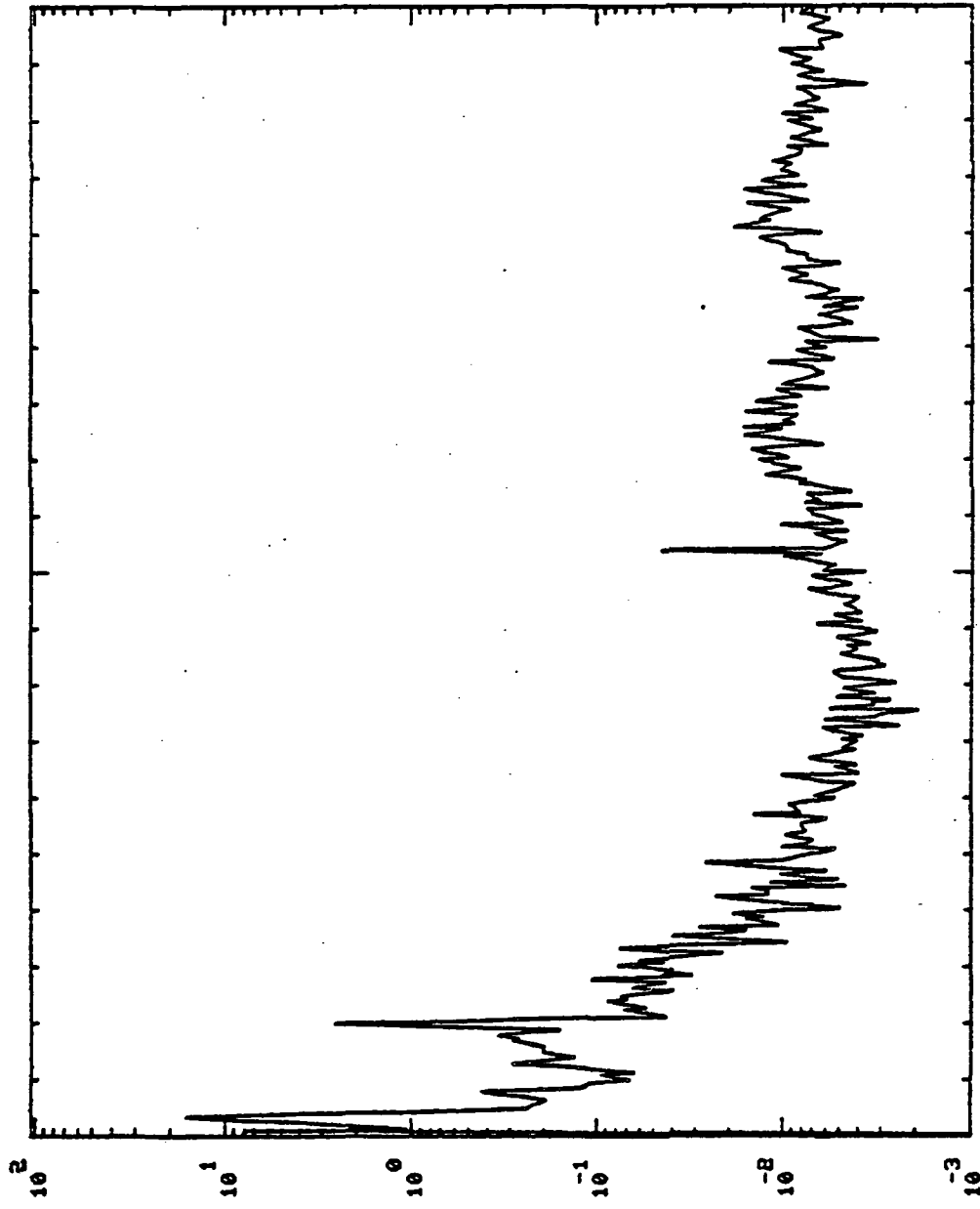


2 4  
x 10

S+ 450.01H0.'S

PBP DS PR

901295



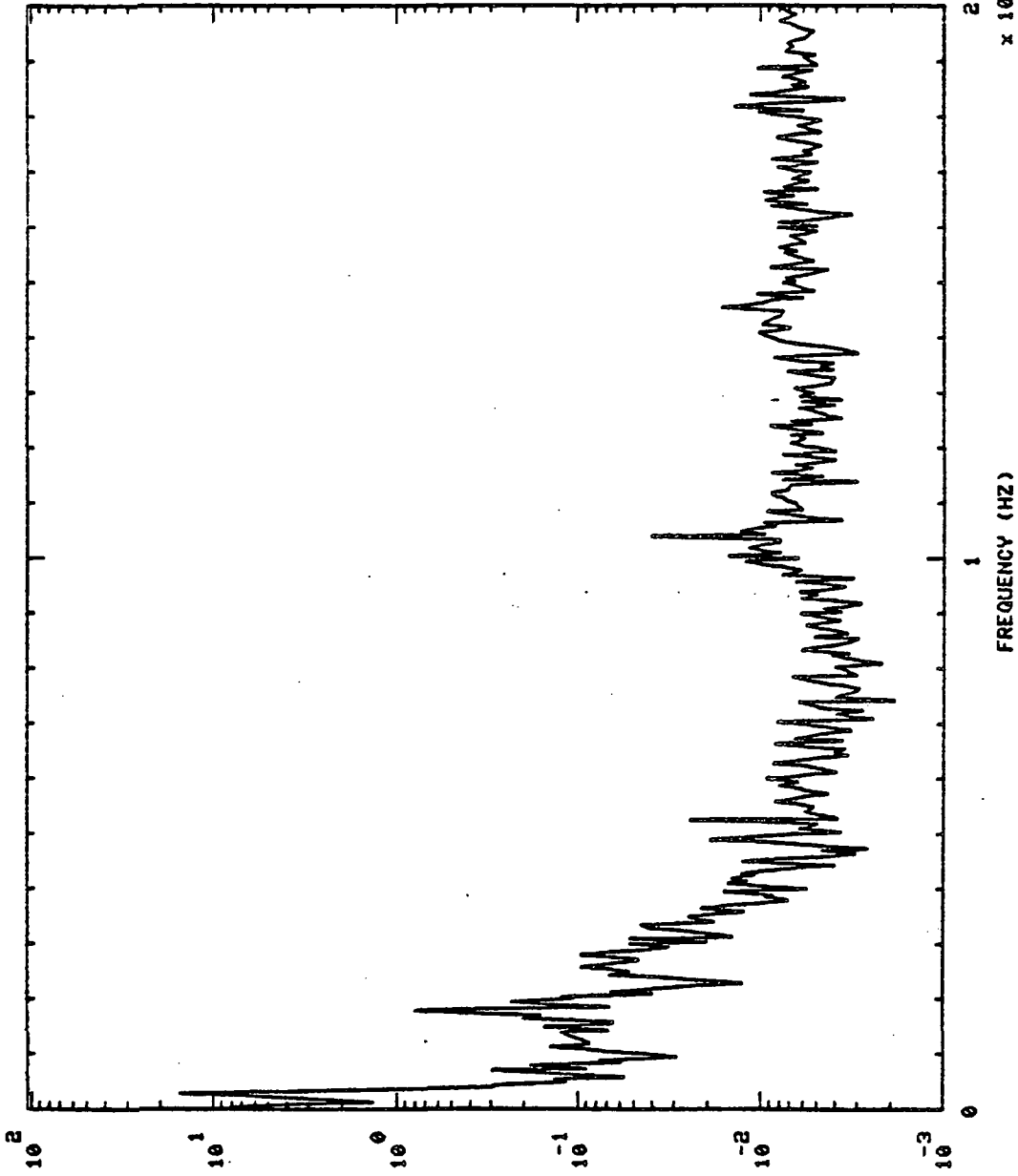
$10^4$   
x  $10^0$

1  
FREQUENCY (HZ)

P S G / H Z

S+ 500.01H0,'S

S01295 PBP DS PR

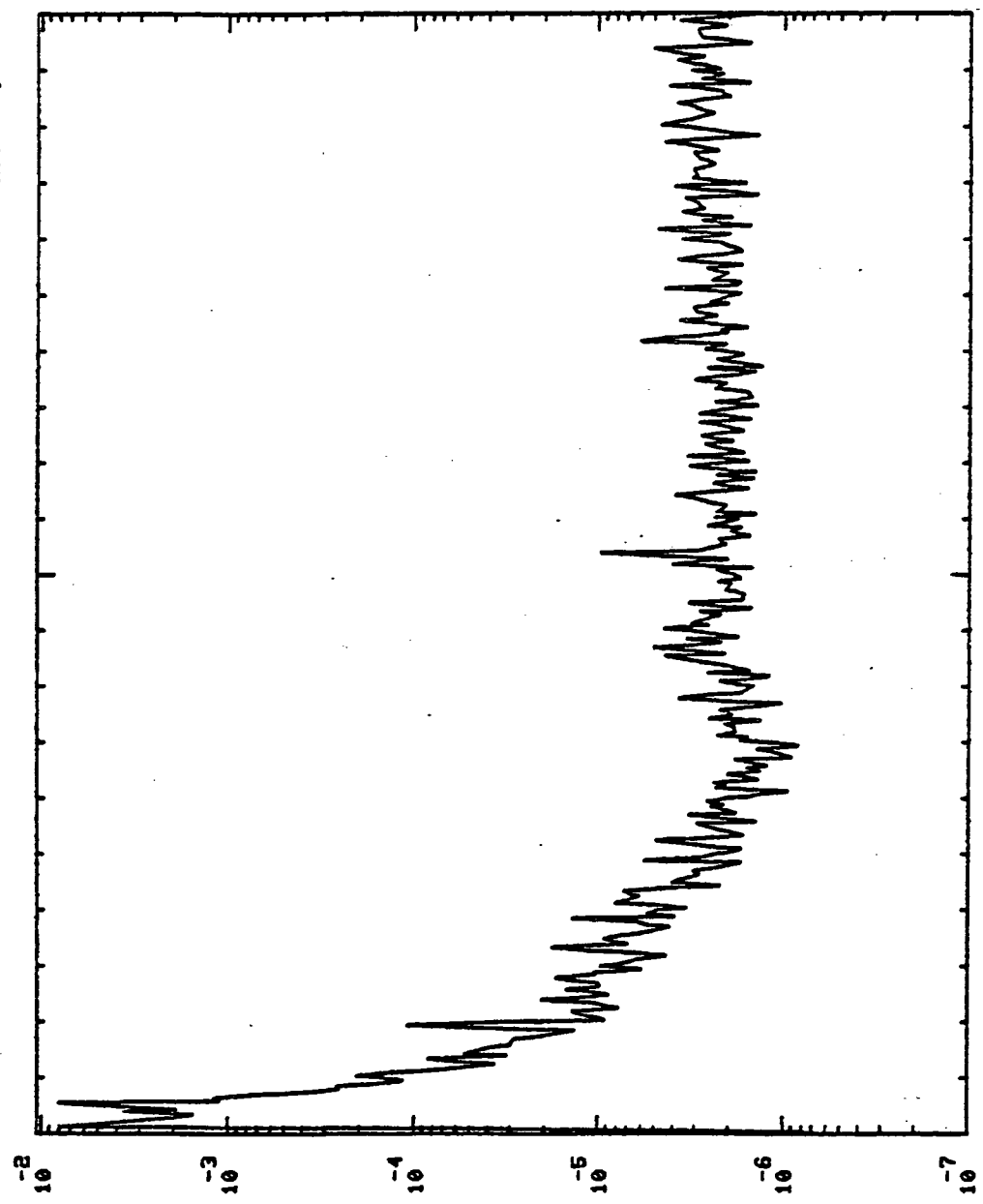


P S D / H Z

FREQUENCY (HZ)

$2.4 \times 10^4$

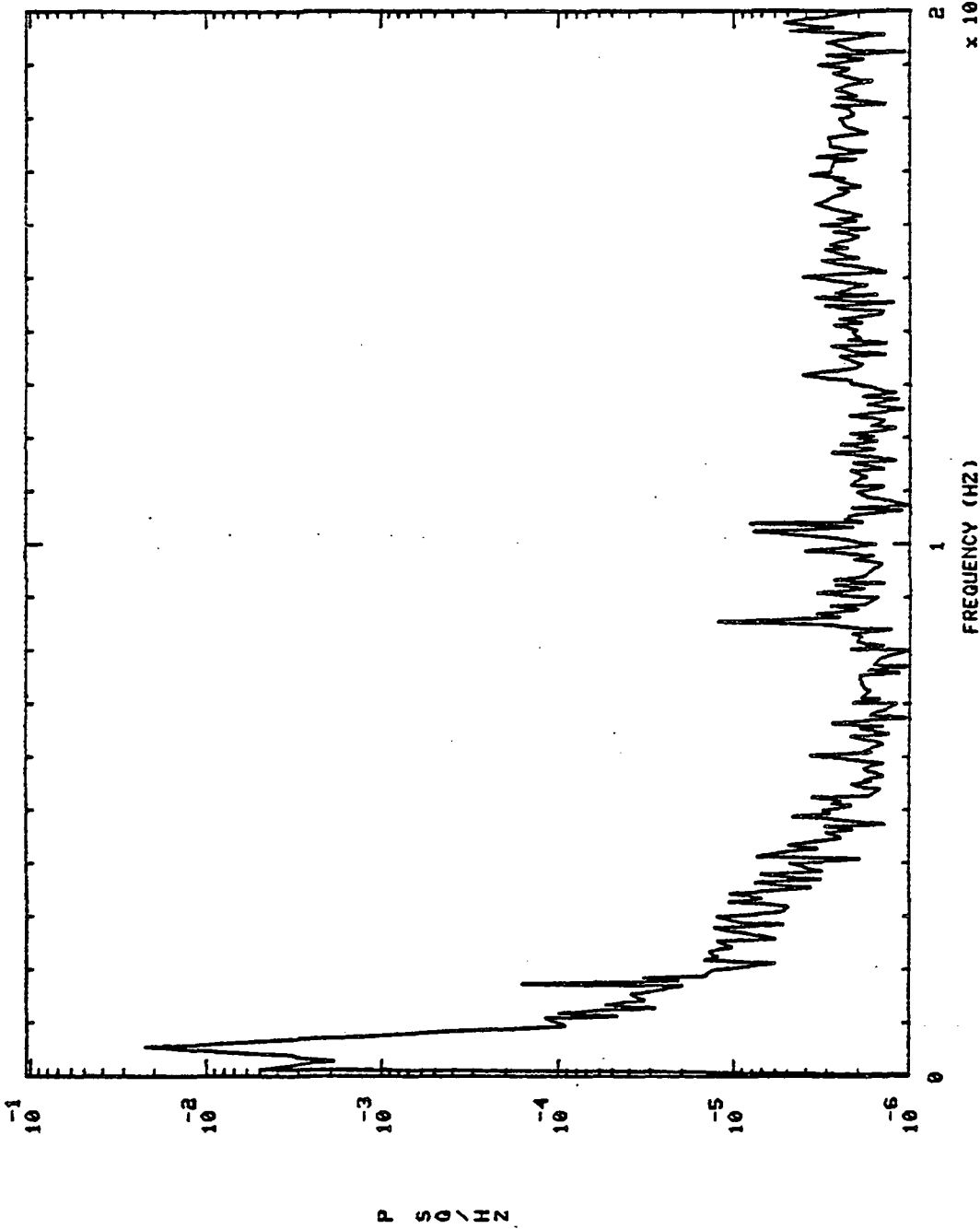
901295 HPOP IN PR S+ 20.01H0.'S



P S D / H Z

FREQUENCY (HZ)  $\times 10^4$

901295 HPOP IN PR S+ 45.01H0,'S



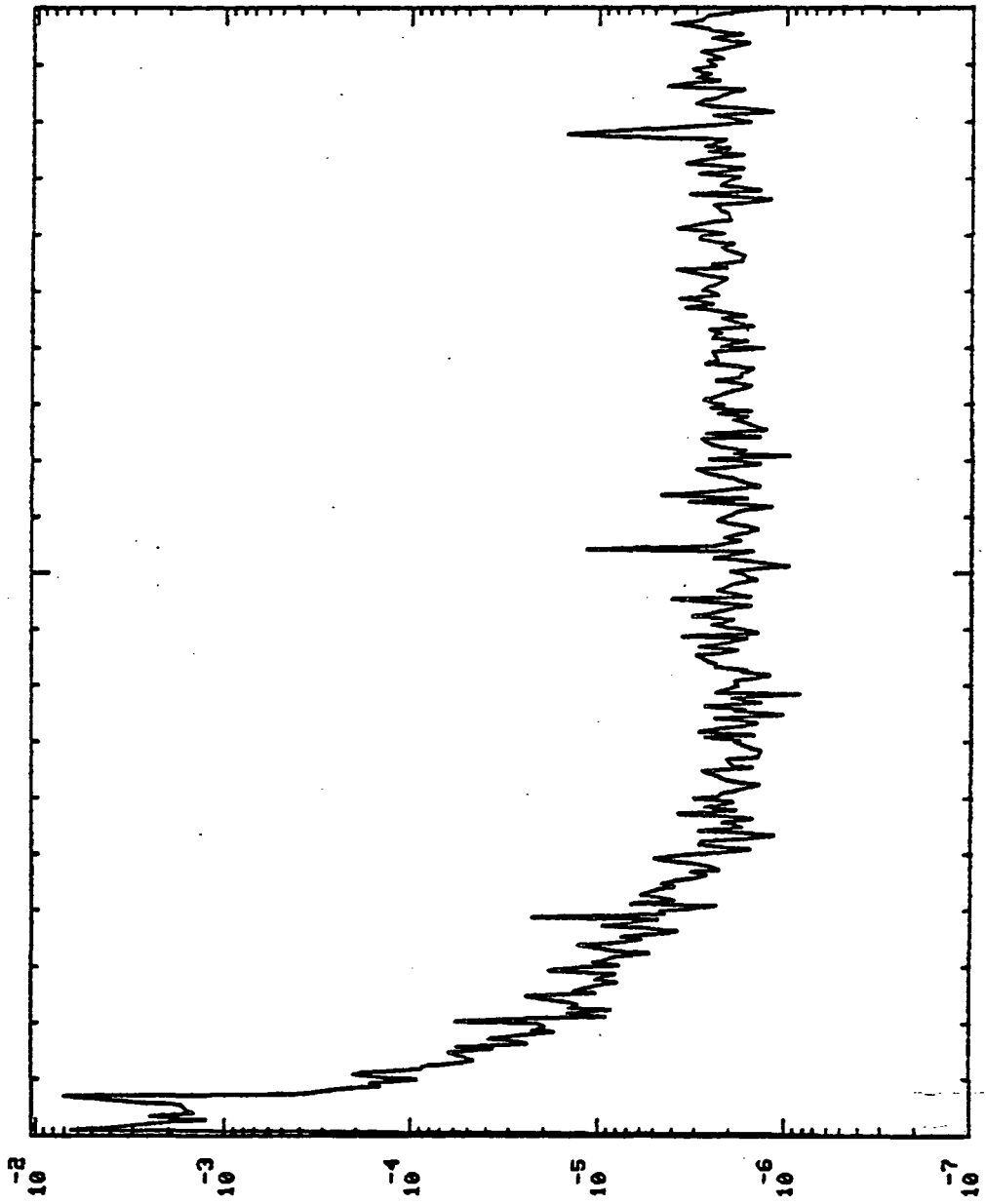
901295 HPOP IN PR S+ 100.01H0,'S

901295 HPOP IN PR

901295

HPOP IN PR

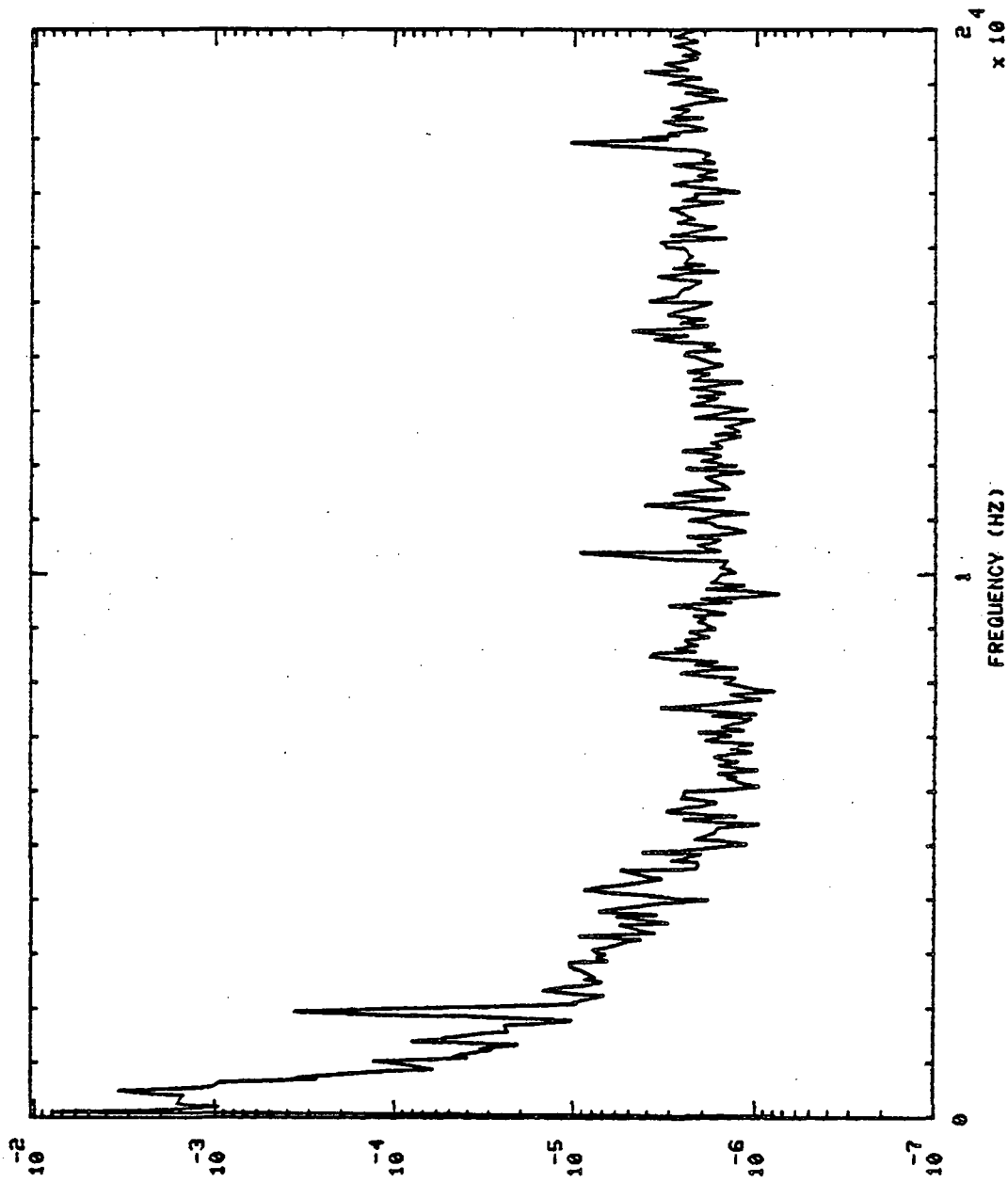
S+ 100.01H0,'S



P S D / H Z

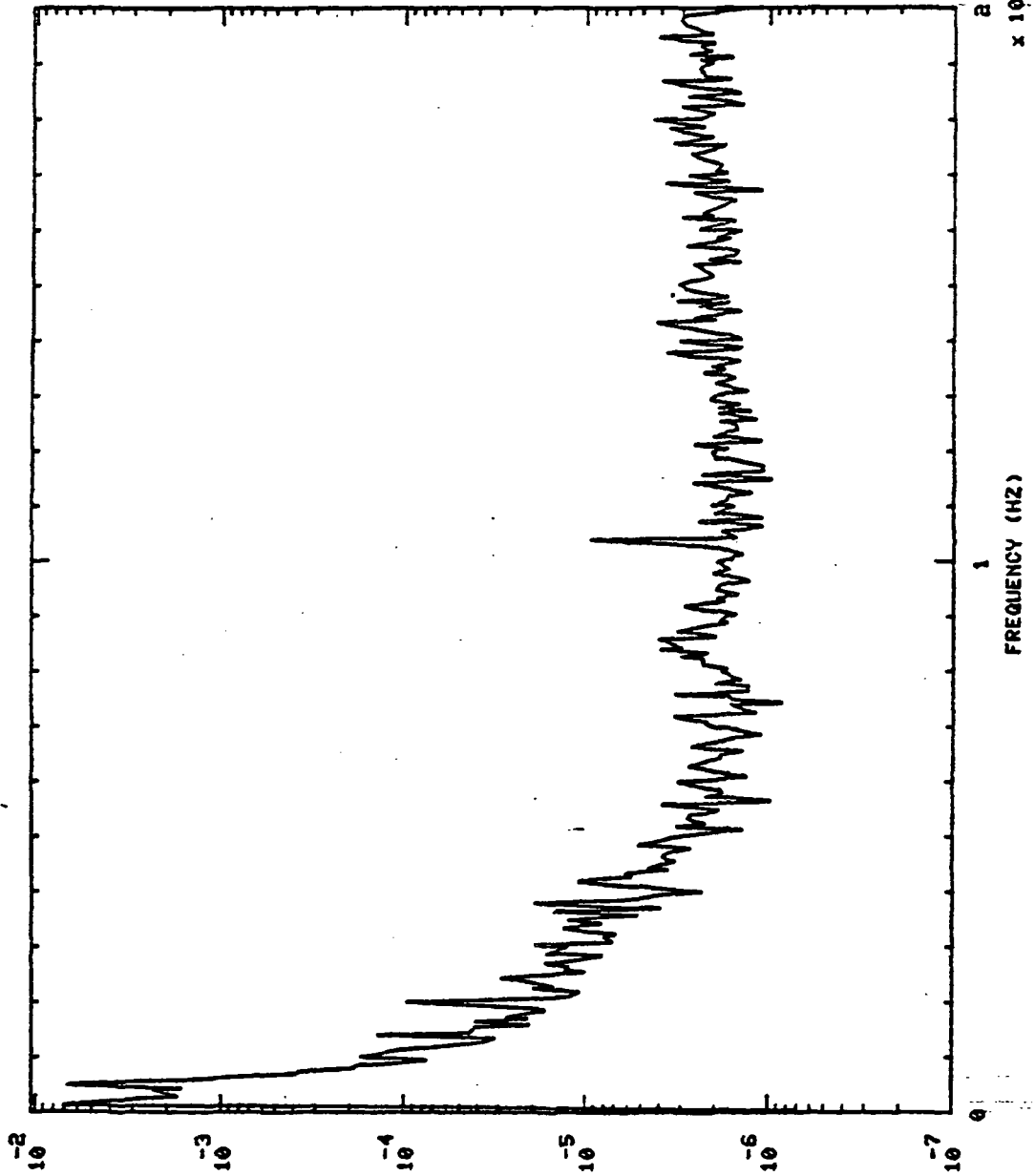
FREQUENCY (HZ) x 10^4

901295 HPOP IN PR S+ 300.01H0,'S





801295 HPOP IN PR St 450.01H0,'S



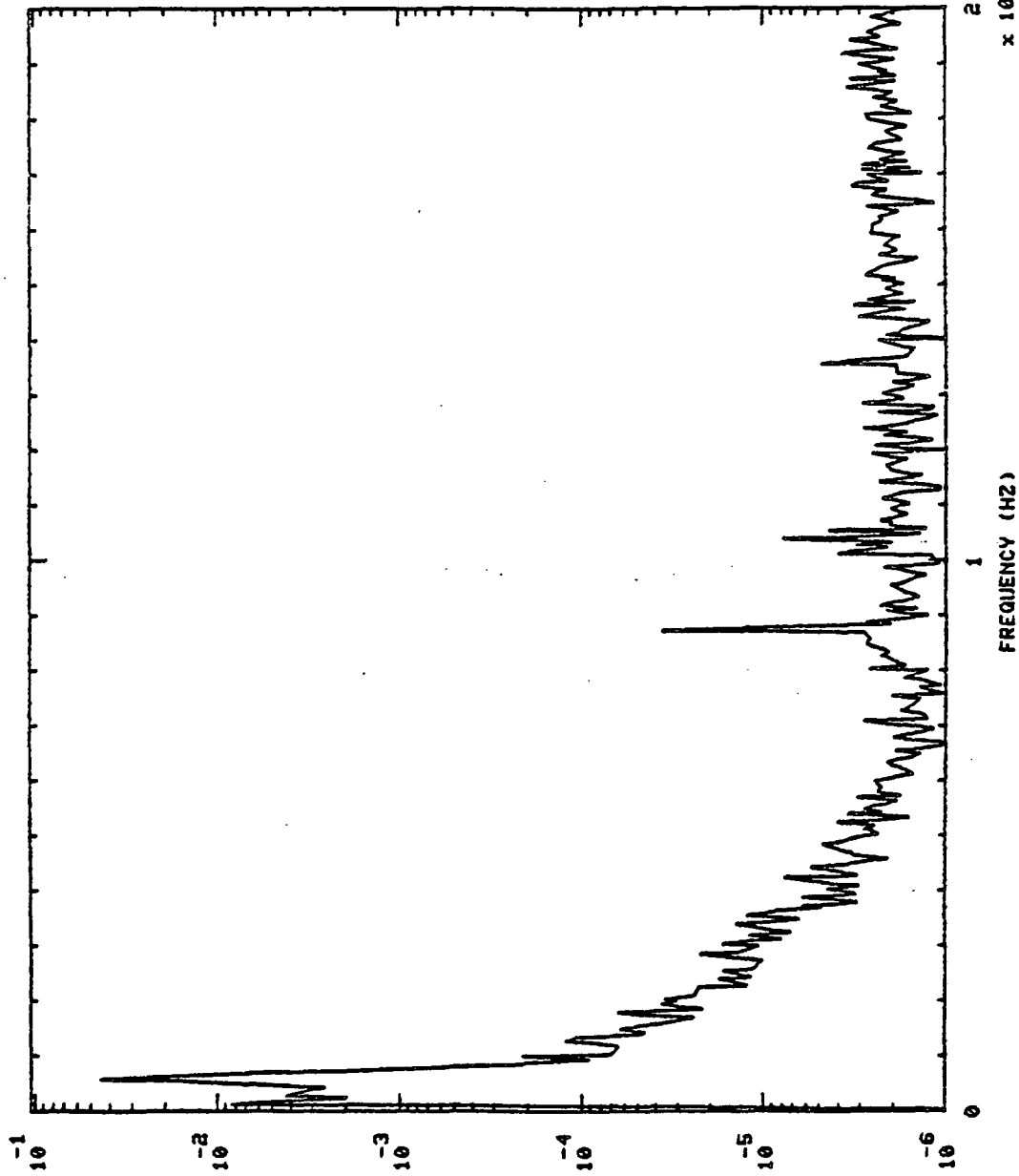
P S D \ N

1  
x 10<sup>4</sup>

FREQUENCY (HZ)

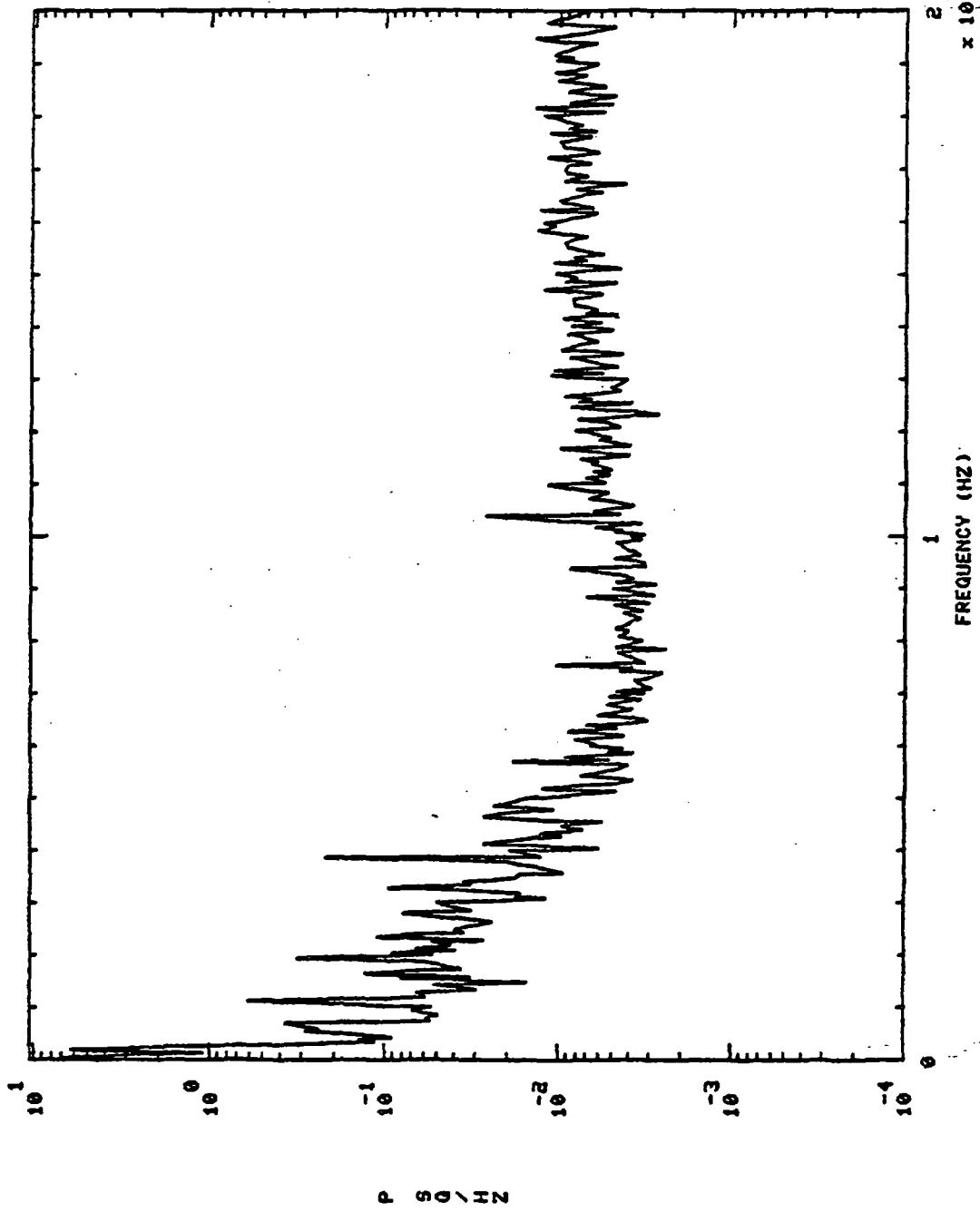
S+ 500.01H0,'5

901295 HPOP IN PR



P S Q \ H Z

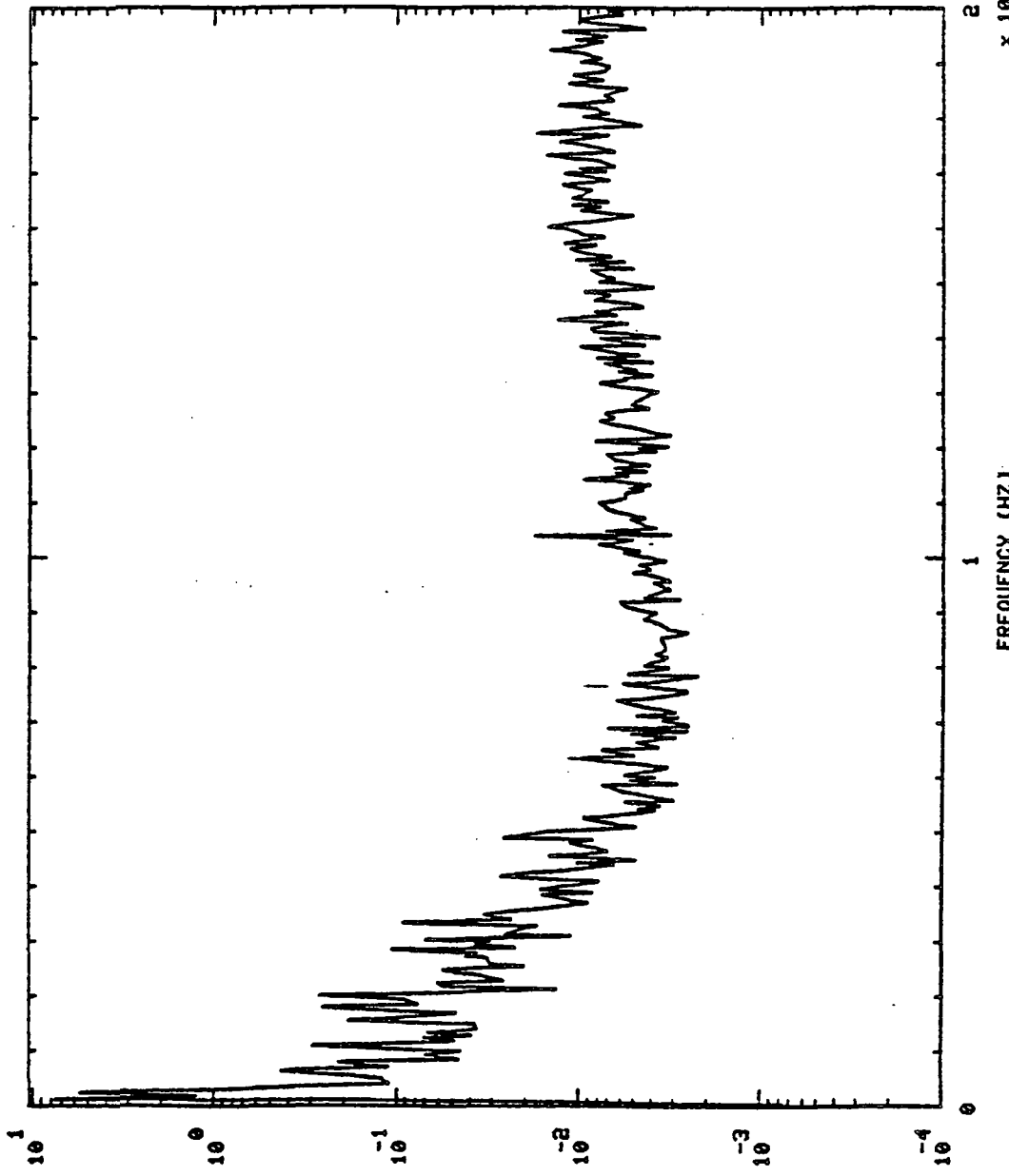
901295 OPB PC PR DC S+ 20.01H0.'S



S+ 45.01H0,'S

OPB FC PR DC

901295

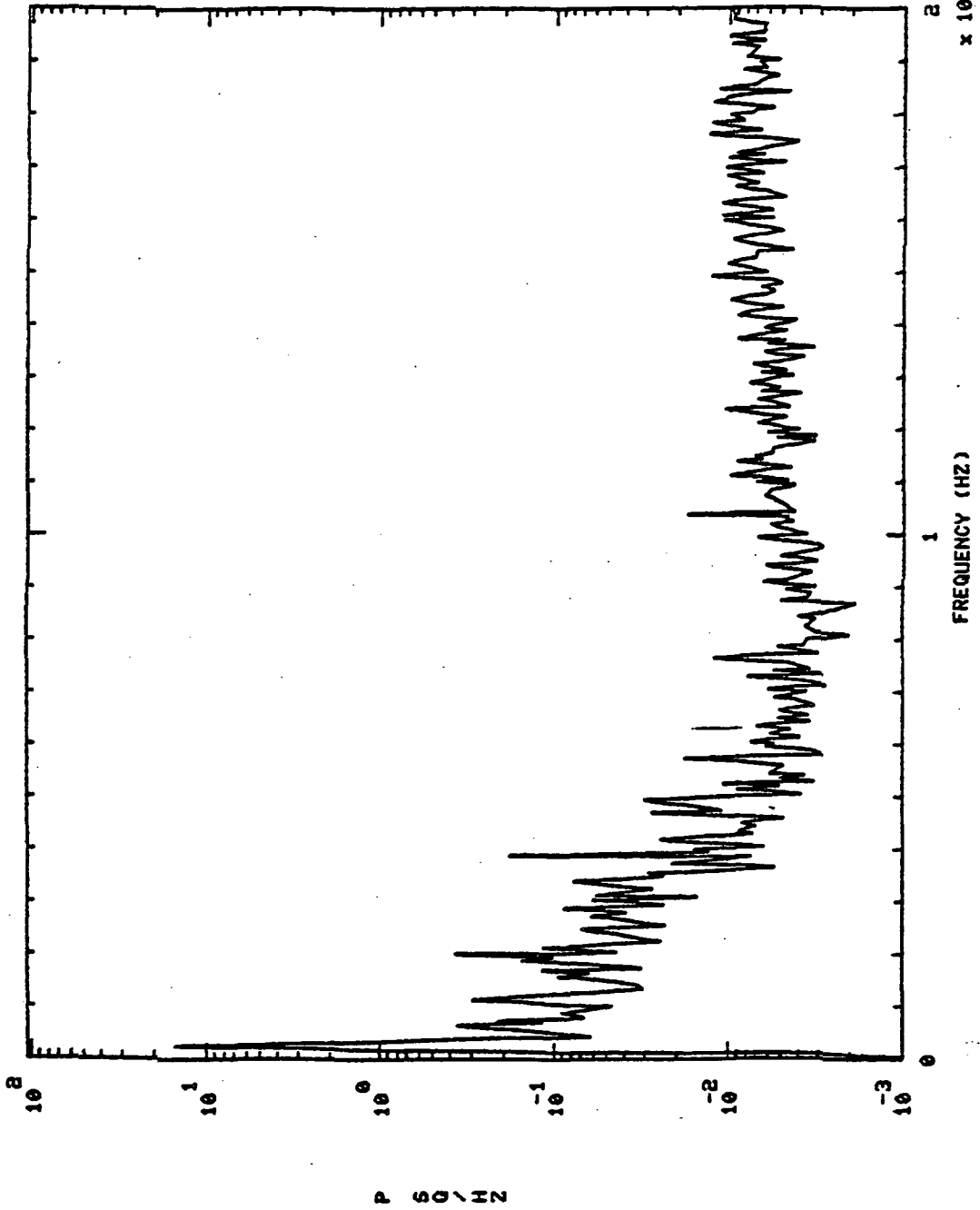


$10^4$   
 $\times 10$

FREQUENCY (HZ)

PSG / HZ

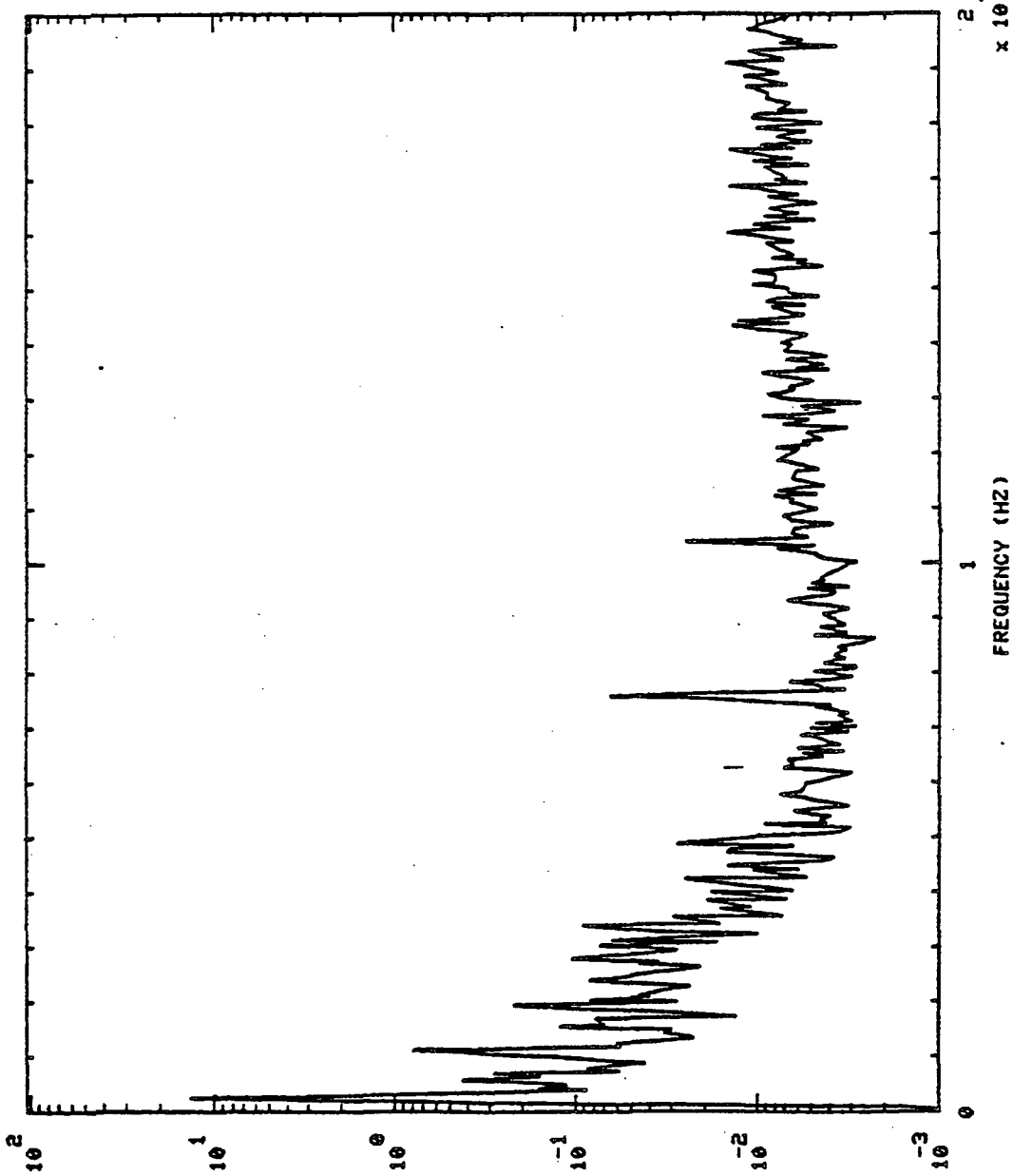
901295 OPB PC PR DC S+ 100.01H0.'S



S+ 300.01H0,'S

OPB PC PR DC

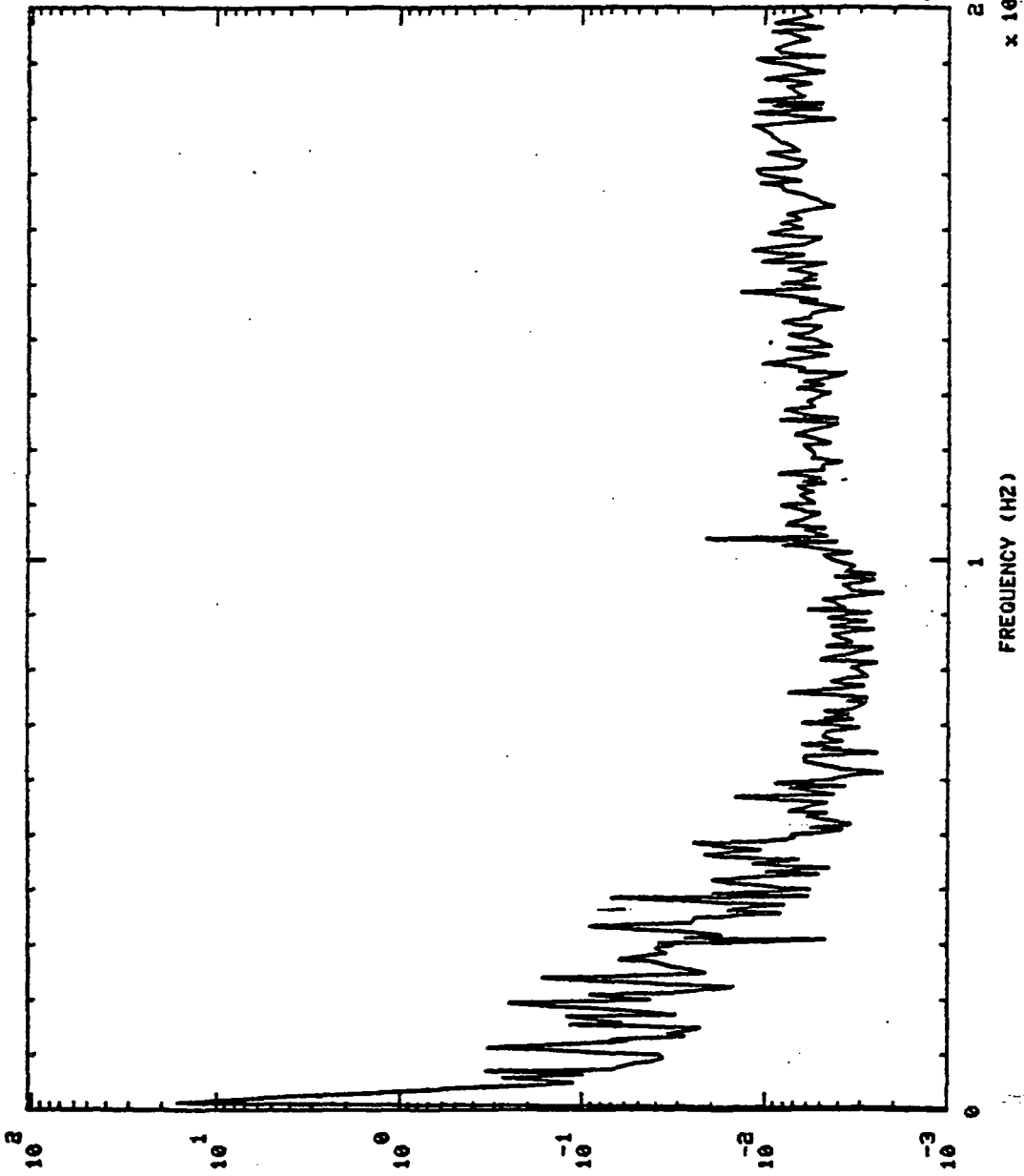
901295



4.9 cm

S+ 450.01H0,'S

901295 OPB PC PR DC

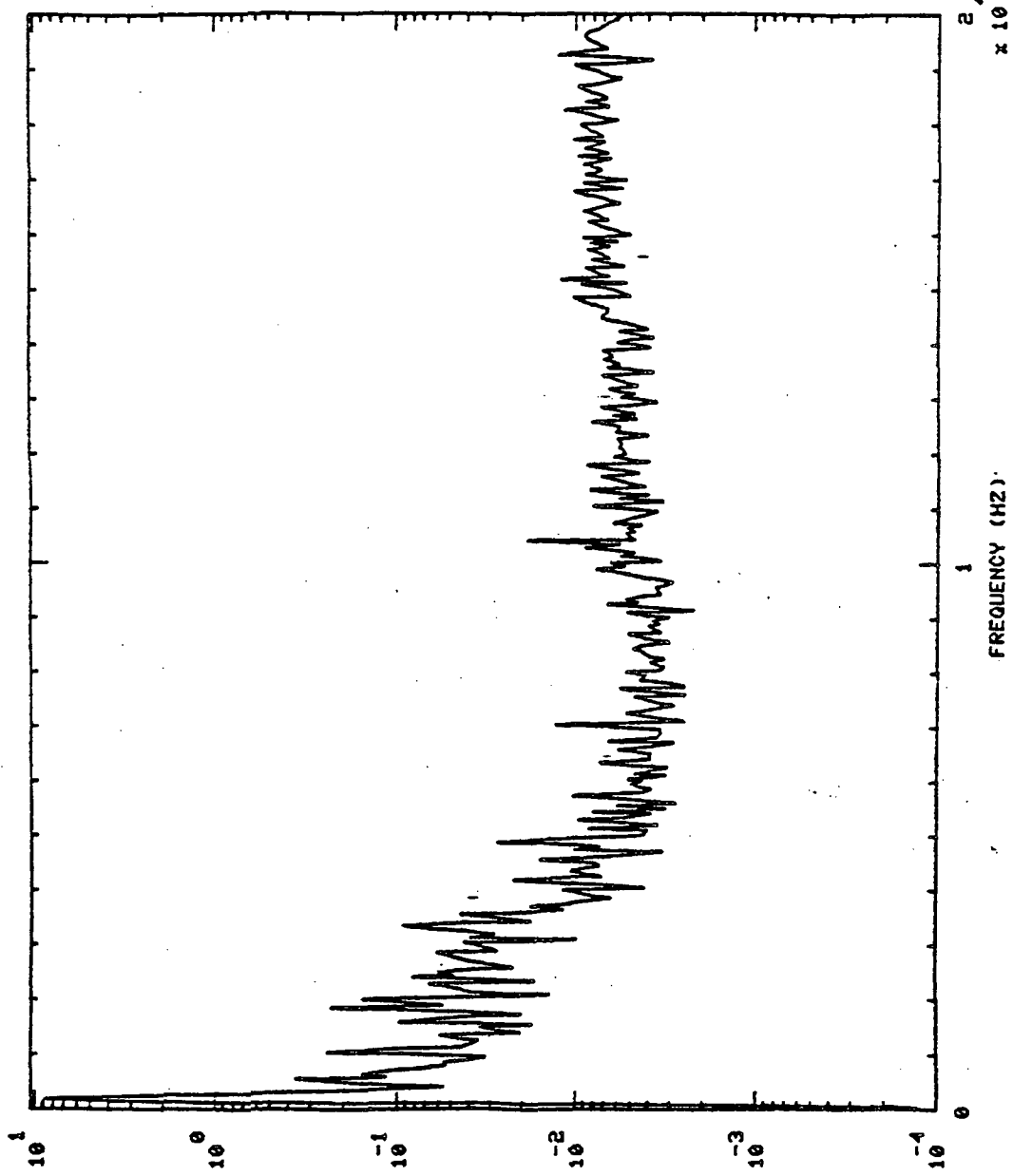


P 50 \ IN

S+ 500.01H0,'S

OPB PC PR DC

901295



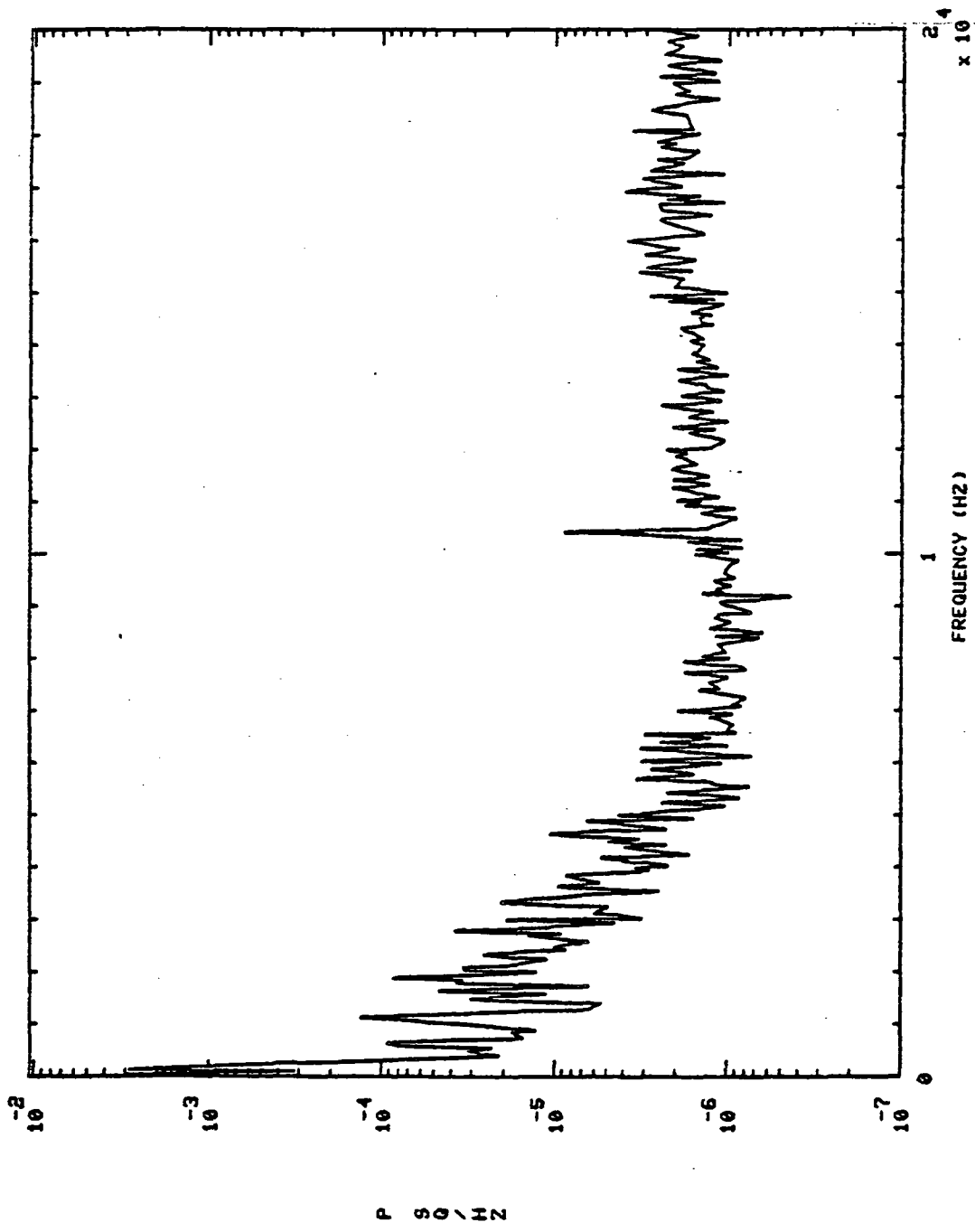
P S / IN

FREQUENCY (HZ)

2 4  
x 10<sup>4</sup>

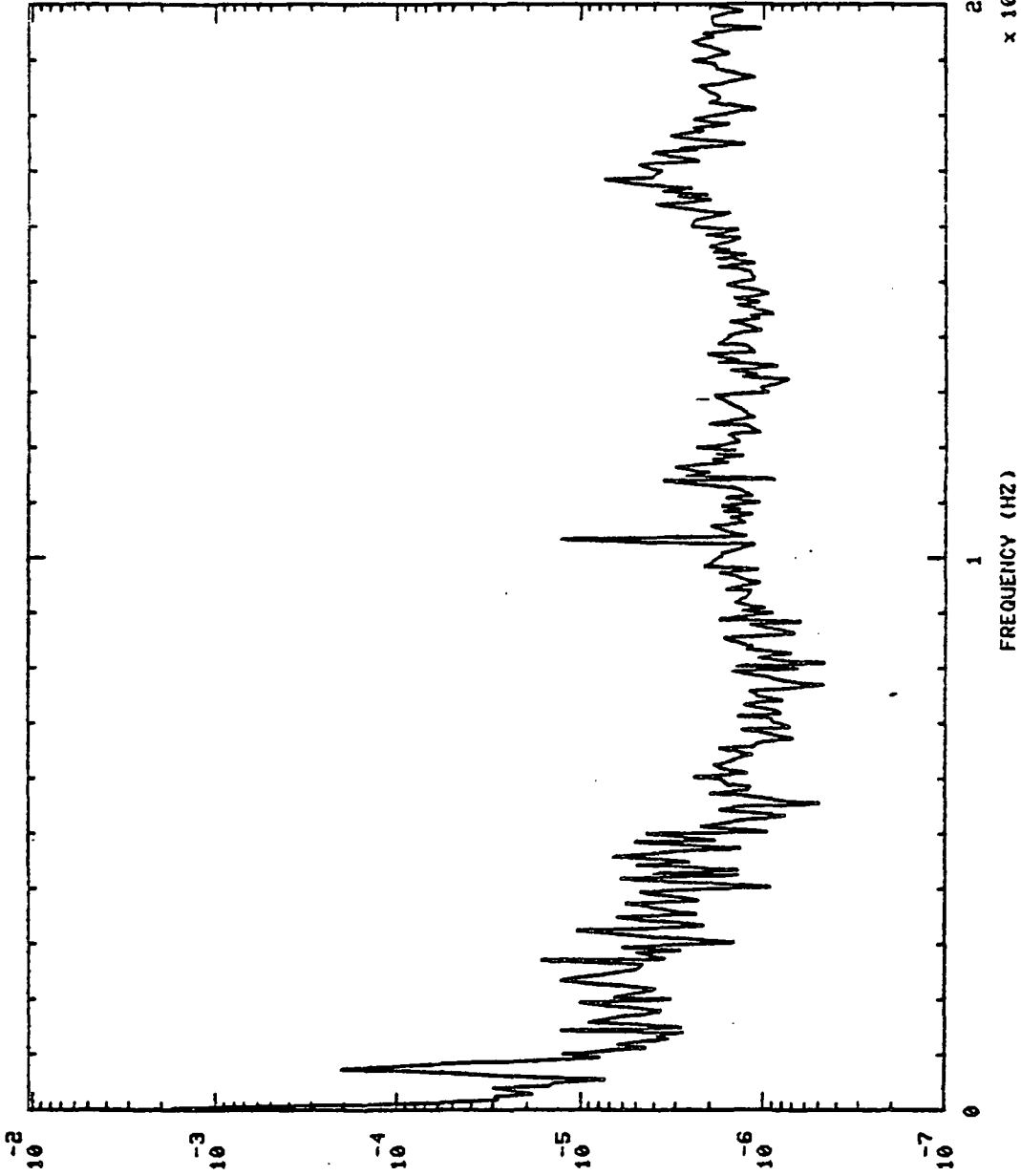


901297 HPOP DS PR S+ 6.01H0,'S



S+ 6.01H0,'S

901297 P8P DS PR

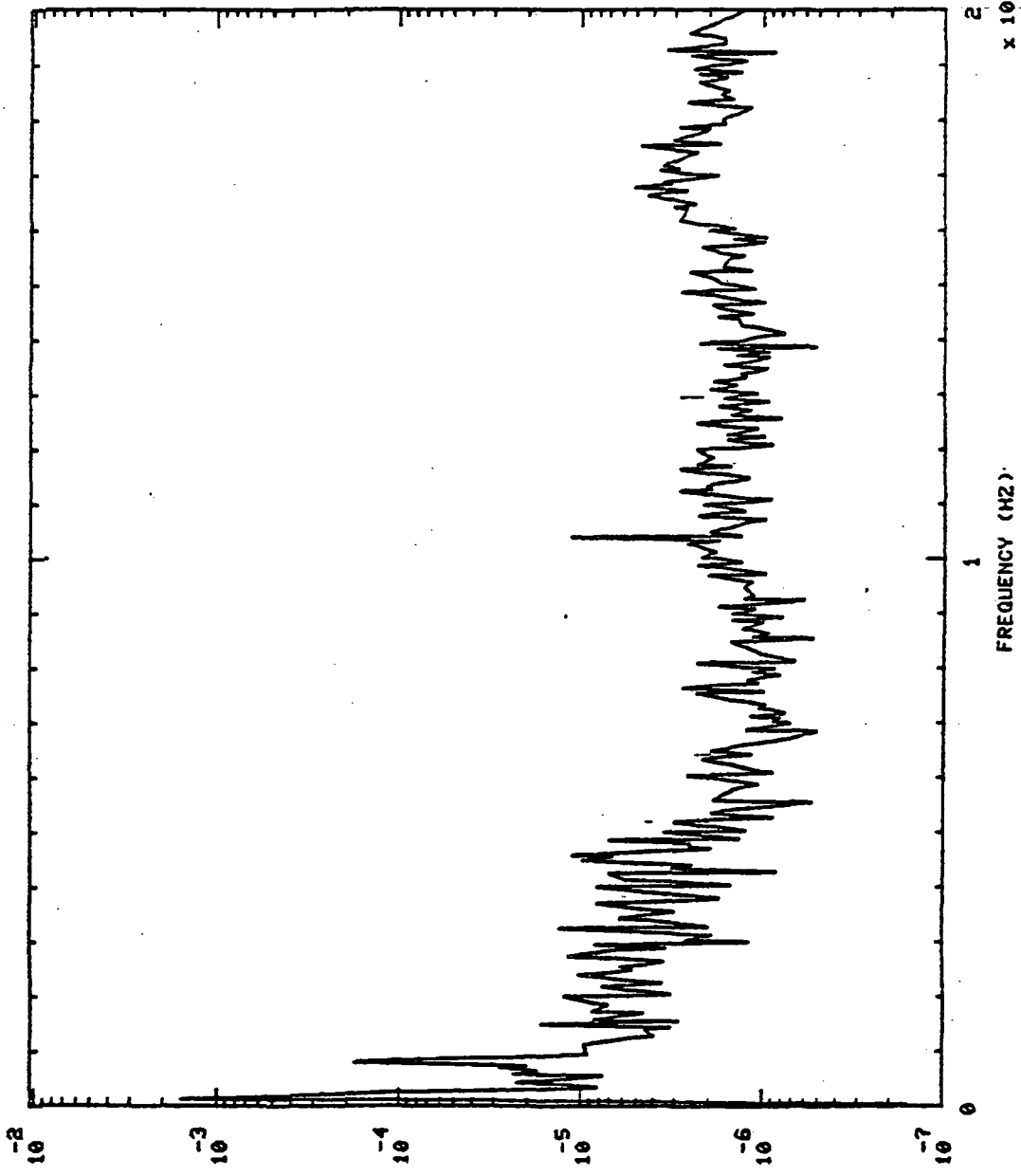


P S Q / H Z

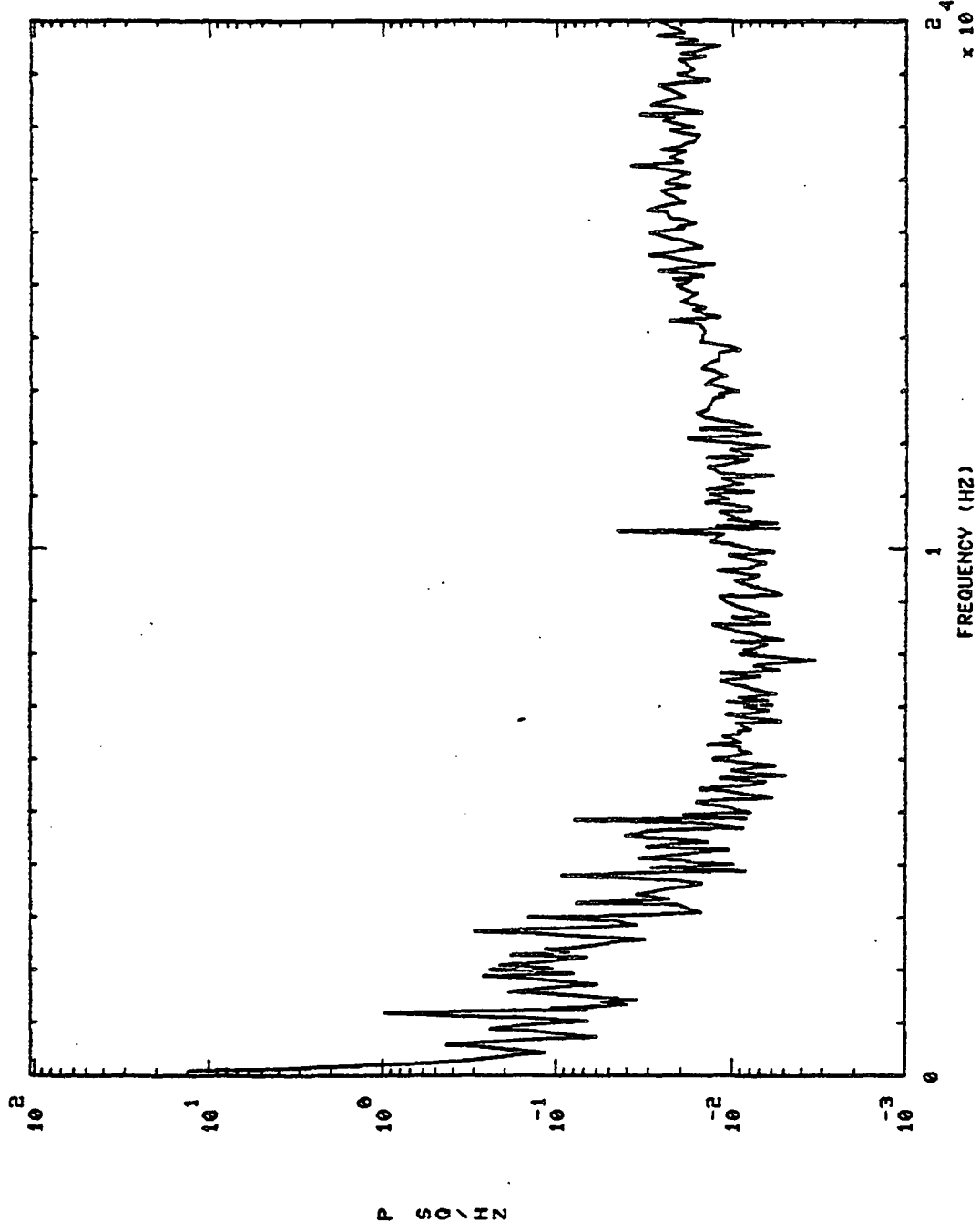
FREQUENCY (HZ)

$2.4 \times 10^4$

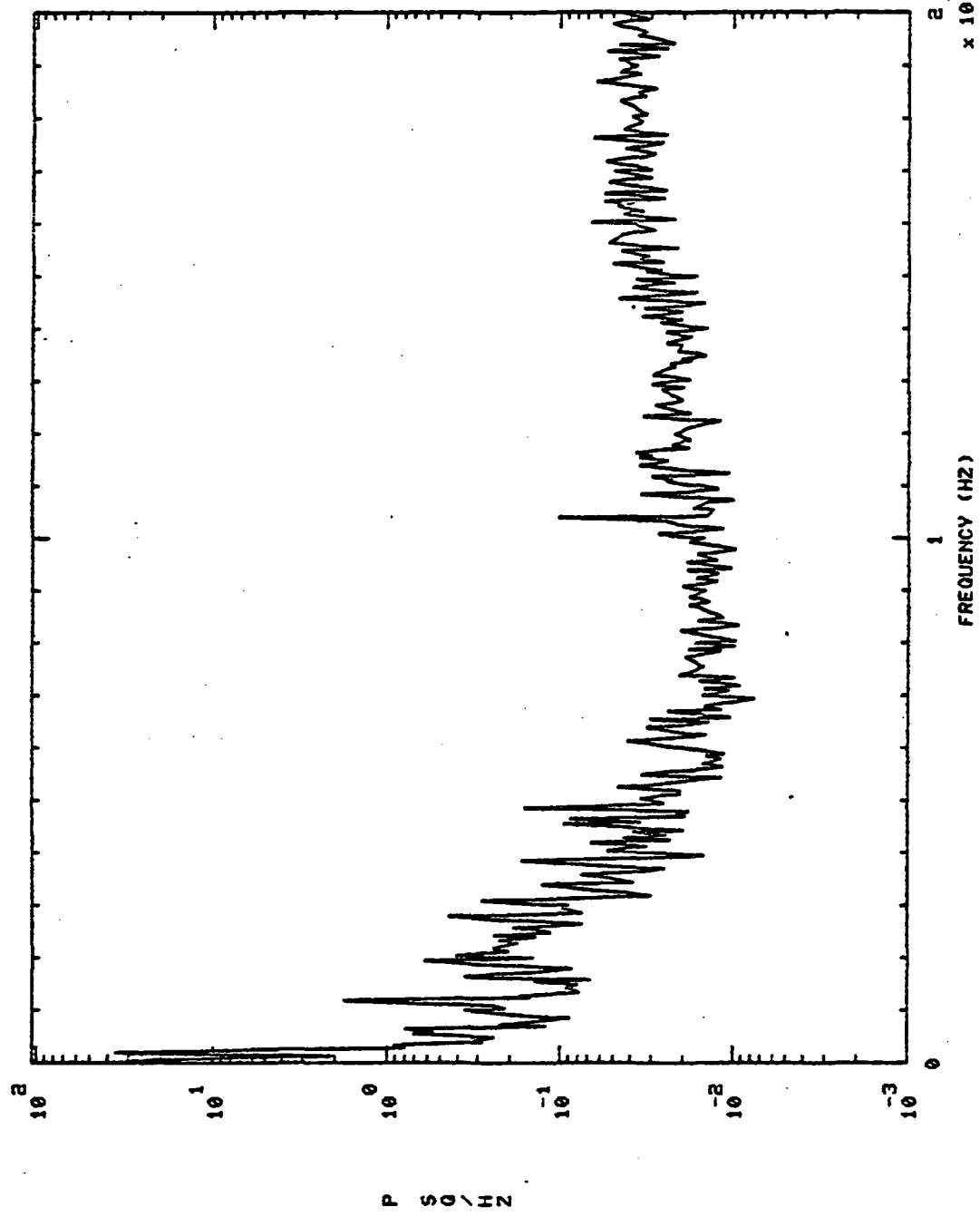
901297 0P8 PC PR DC S+ 6.01H0,'5



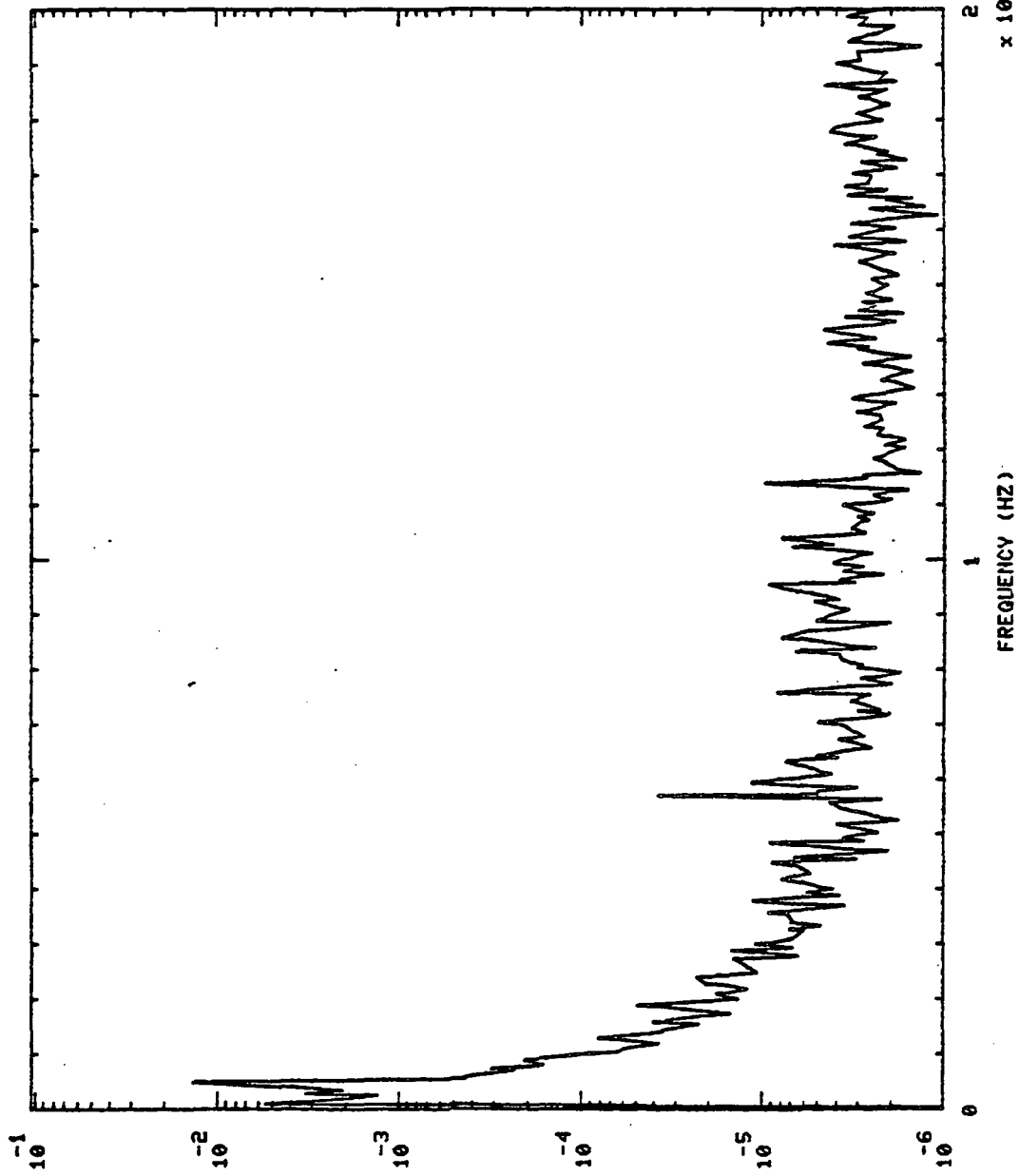
901299 HPOP DS PR S+ 6.01H0,'S



901299 PBP DS PR S+ 6.01H0,'S

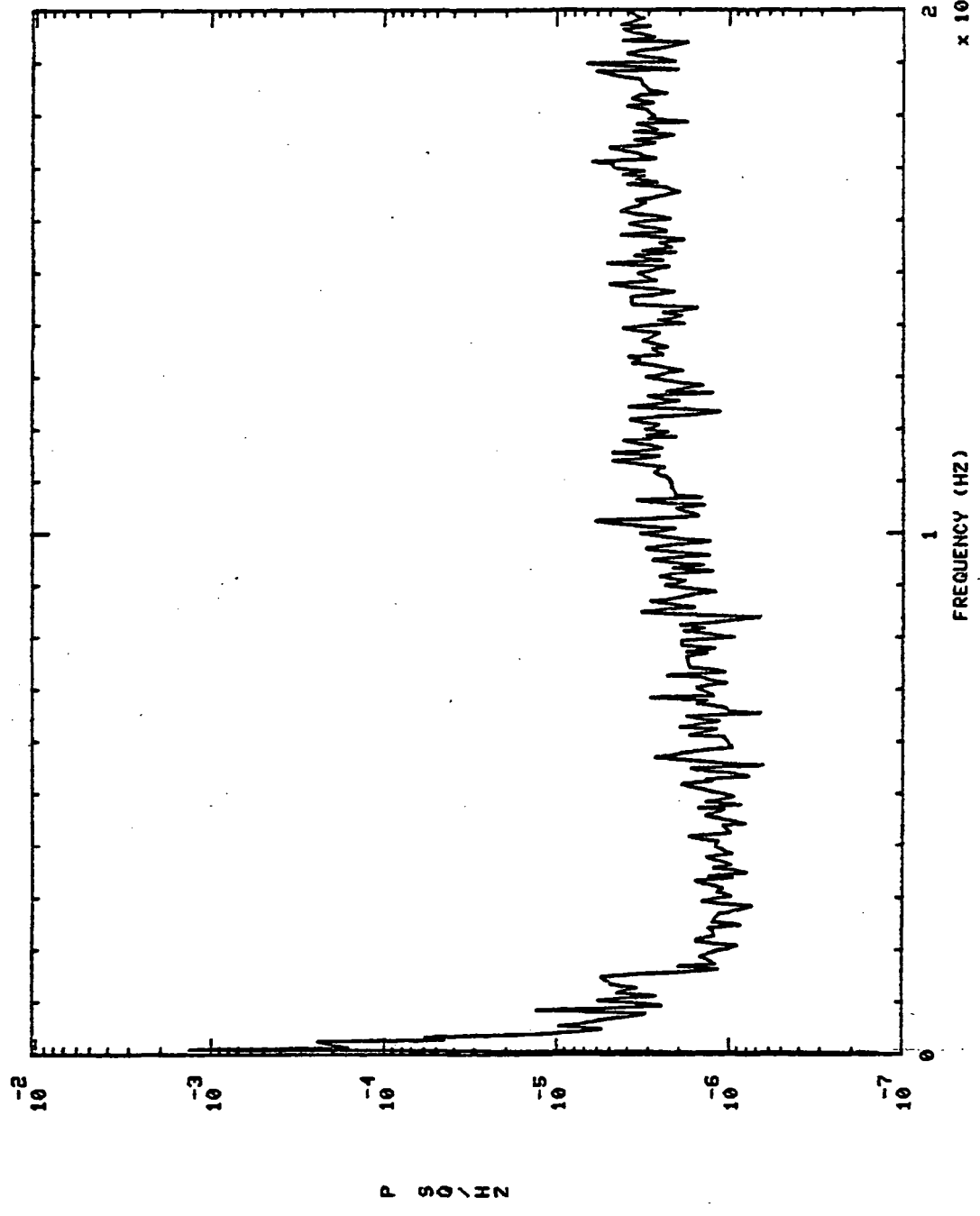


901299 HPOP IN PR S+ 6.01H0,'S



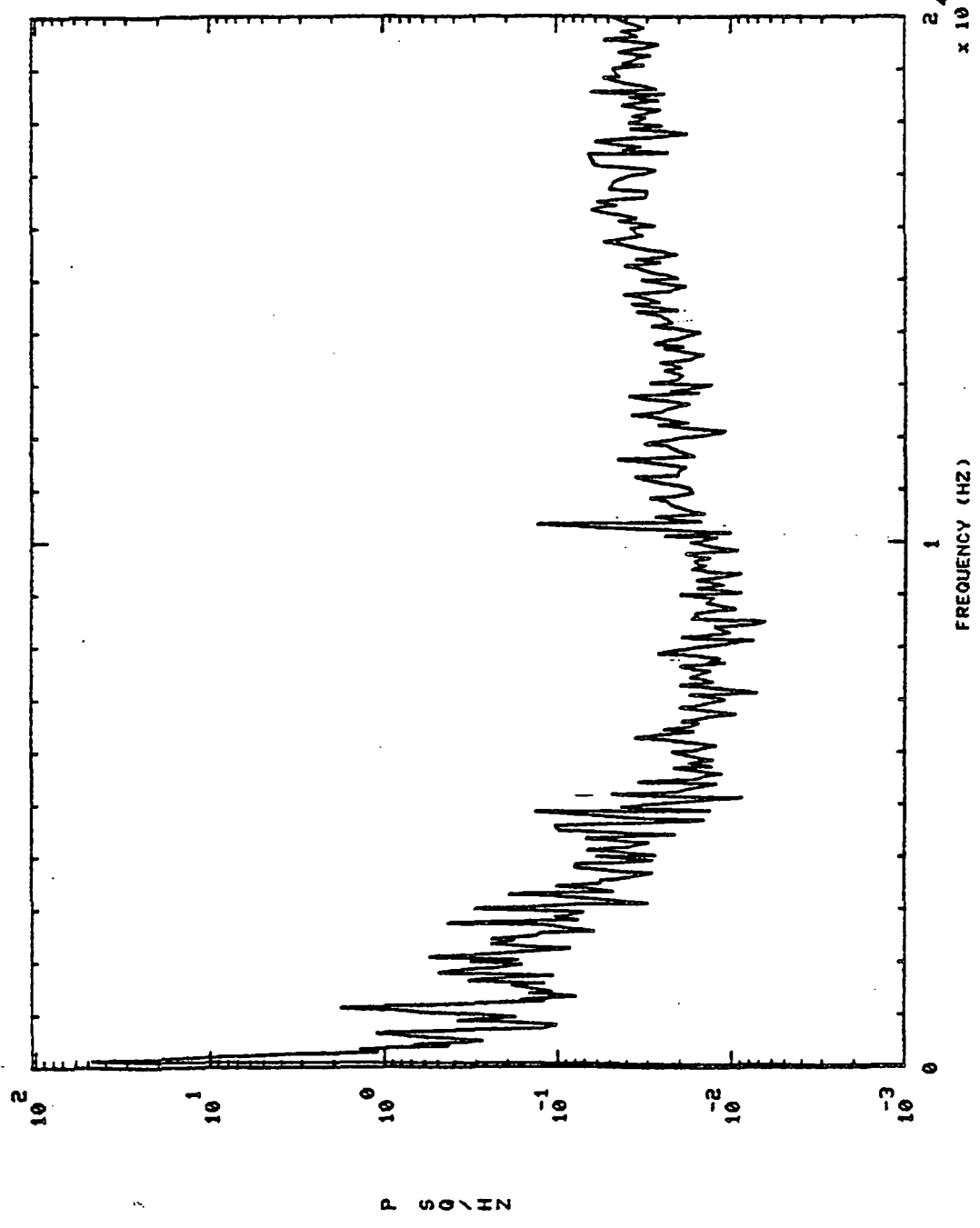
P S G / H Z

901299 AUX LX I PR S+ 6.01H0,'S



S+ 6.01H0,'S

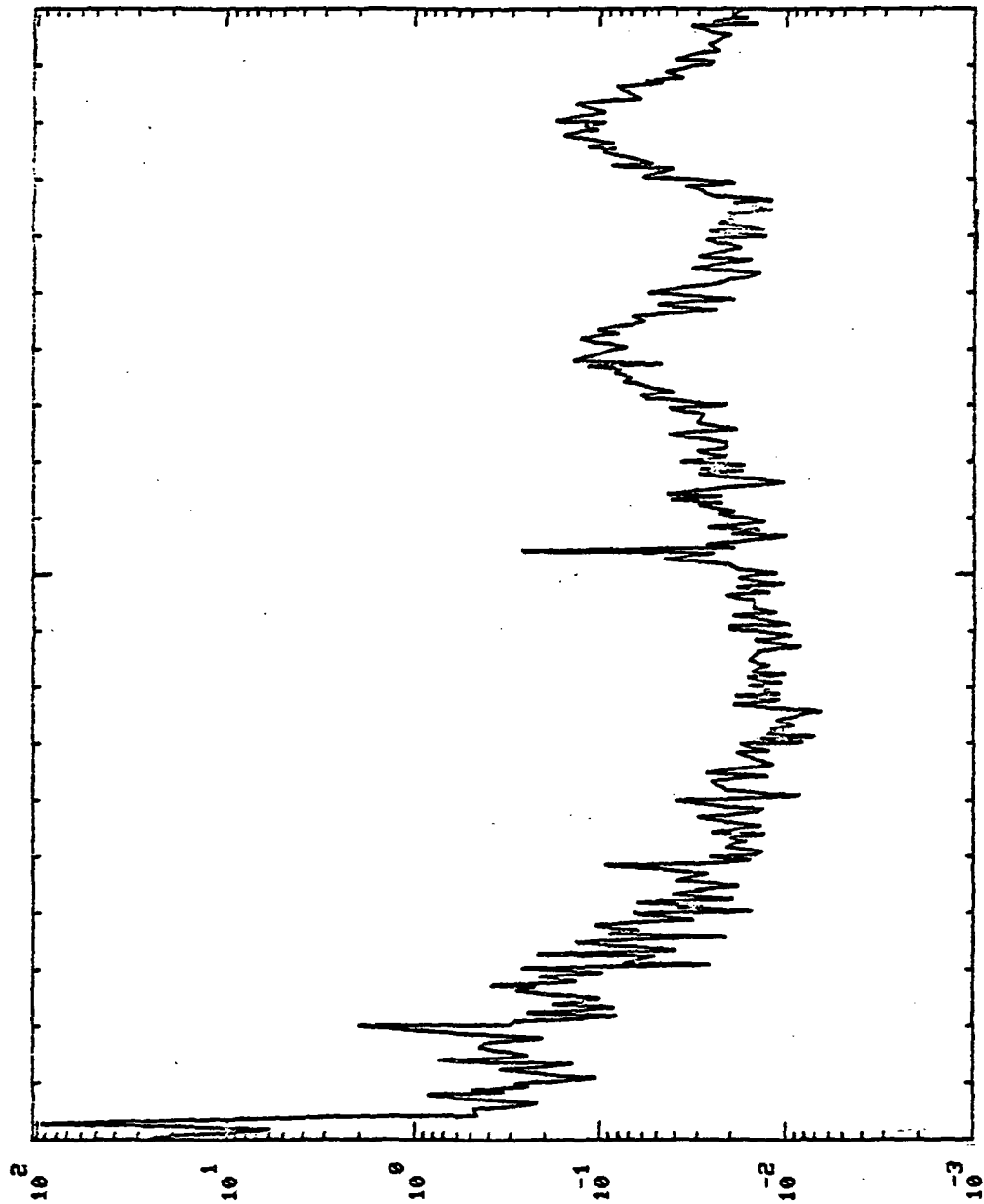
901299 OPB PC PR DC





901300 PBP DS PR

Sr 6.0110.'S

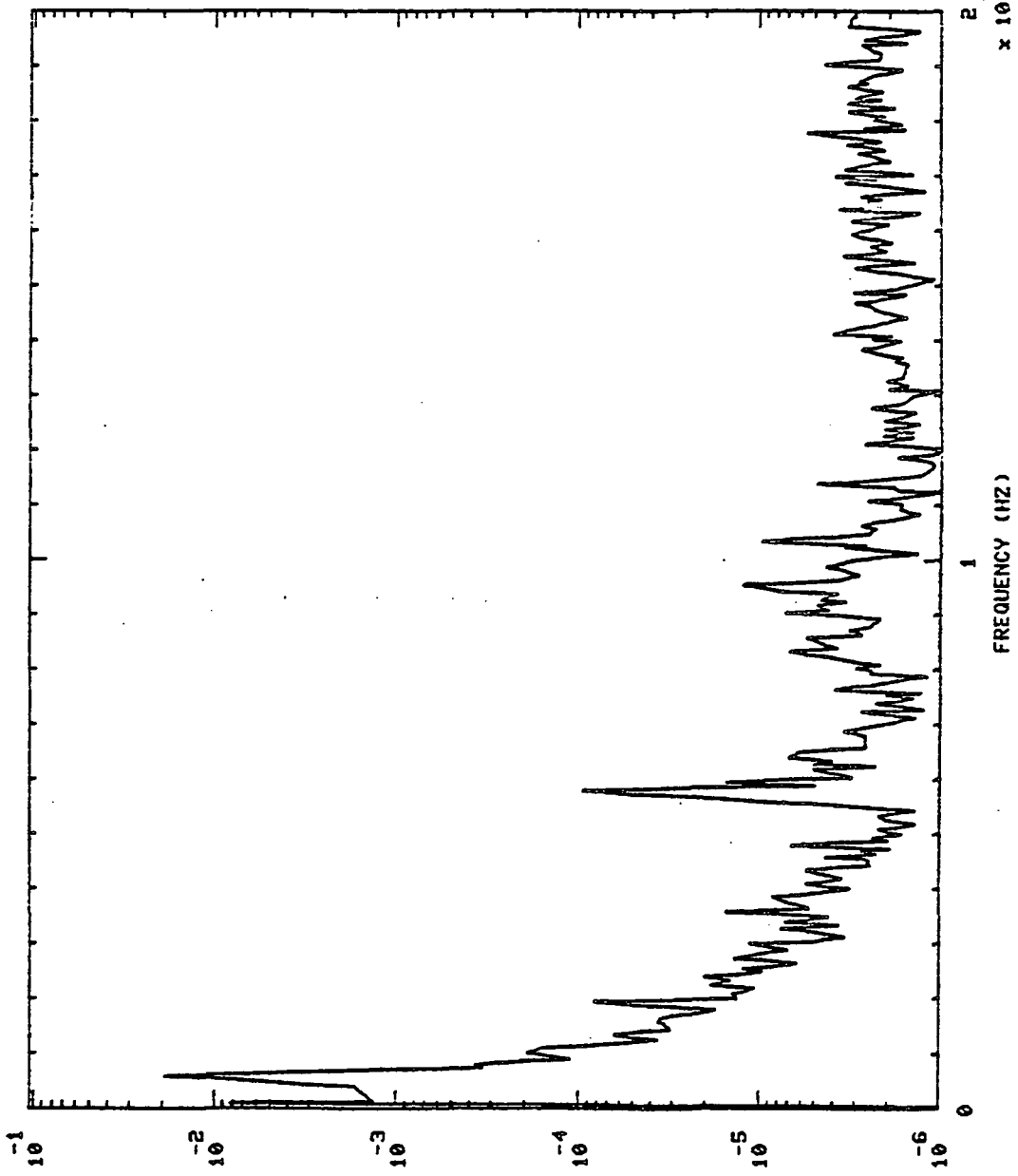


P SQ\HZ

FREQUENCY (HZ)

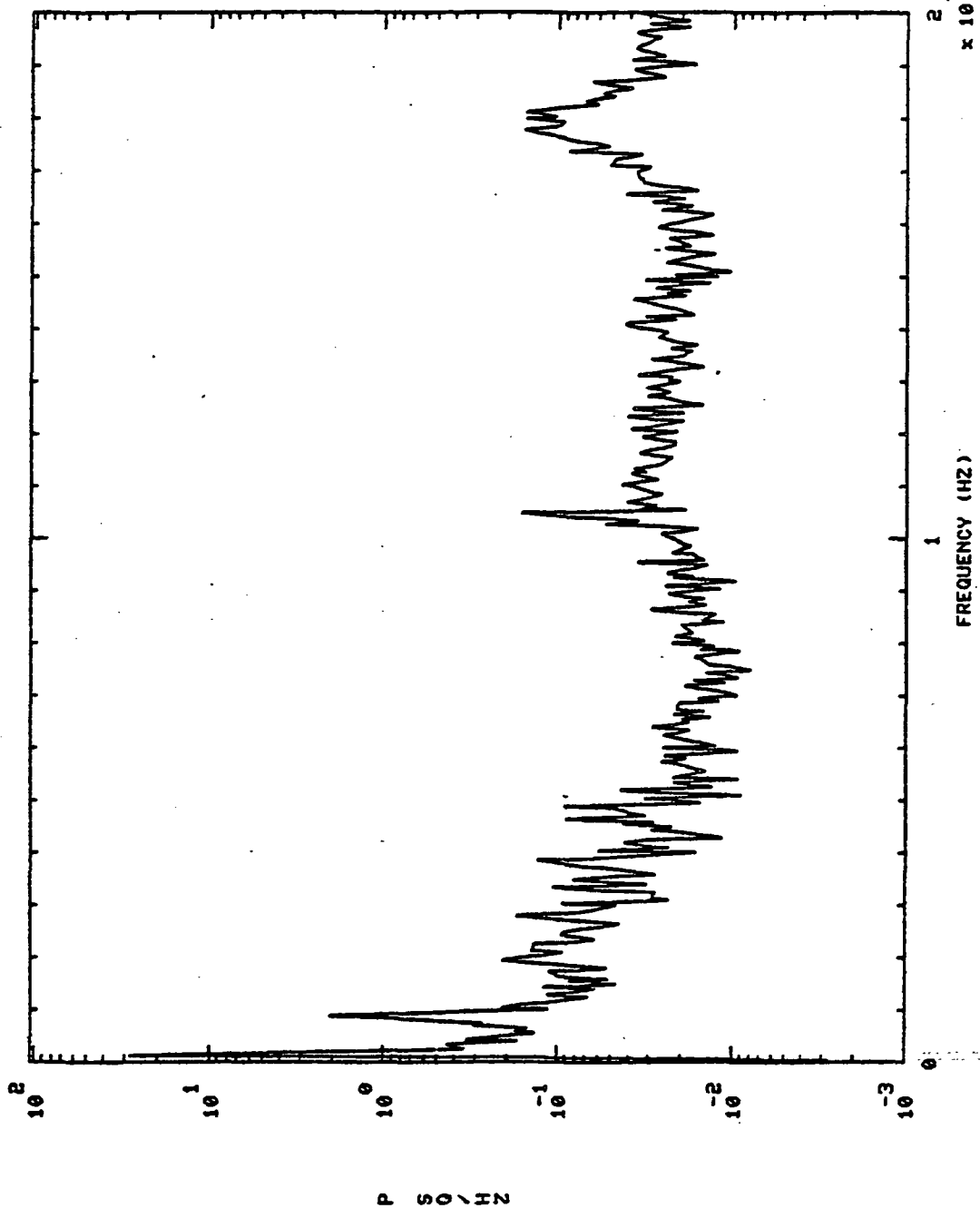
$\times 10^4$

901300 HPOP IN PR S: 6.01H0,'S



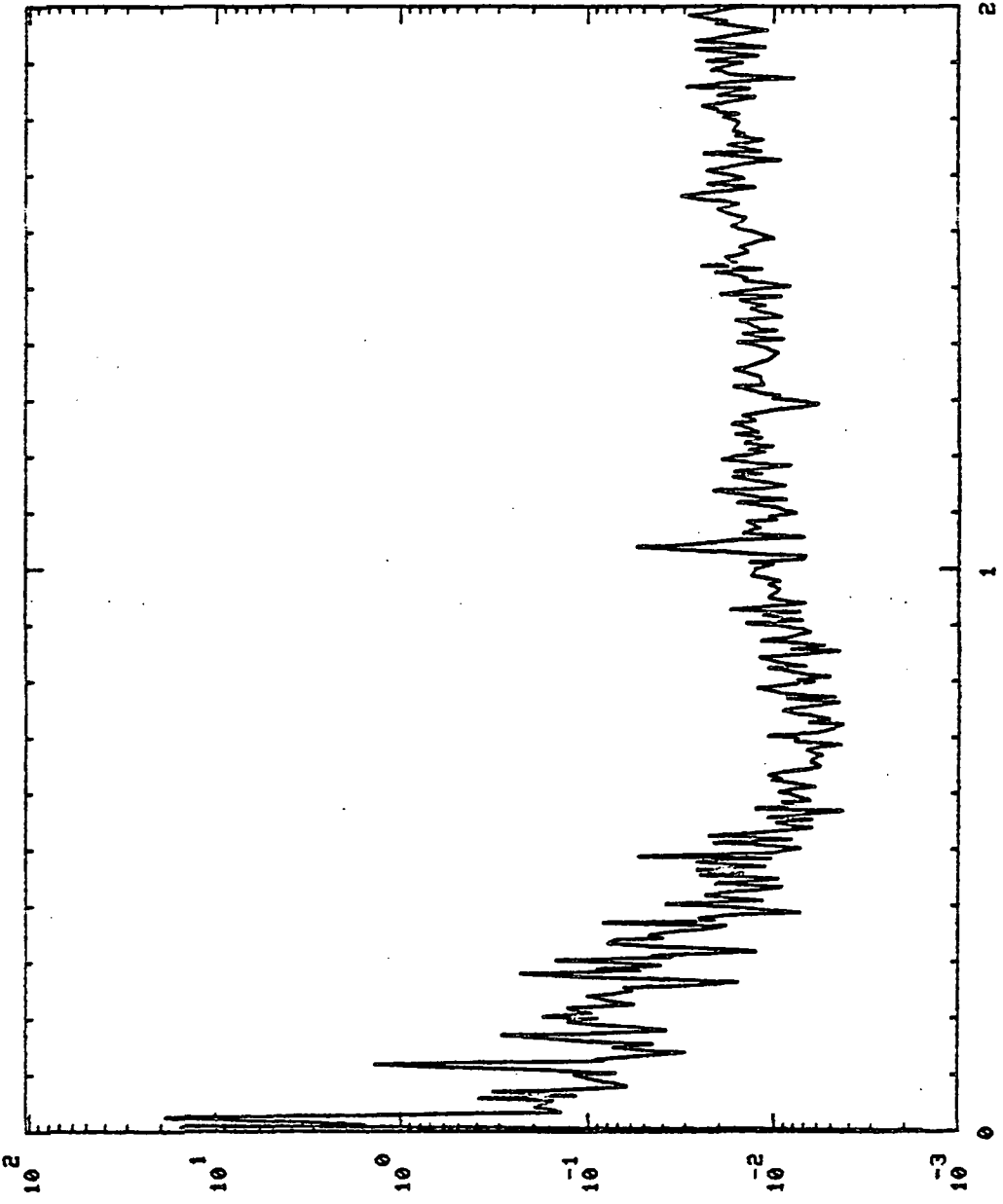
2

901300 OPB PC PR DC S+ 6.01H0,'S



S+ 100.01H0,'S

901301 HPOP DS PR



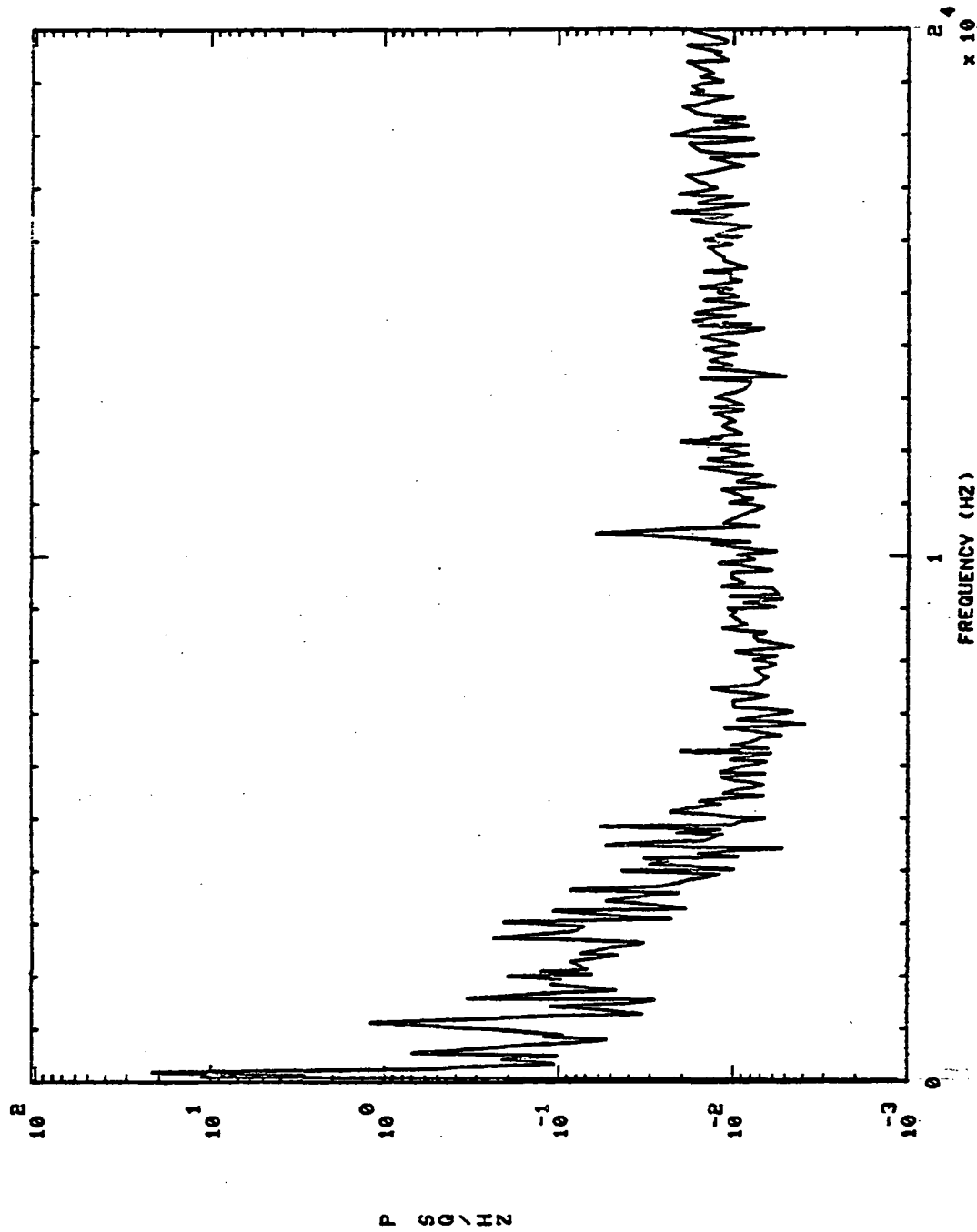
P S O \ H Z

FREQUENCY (HZ)

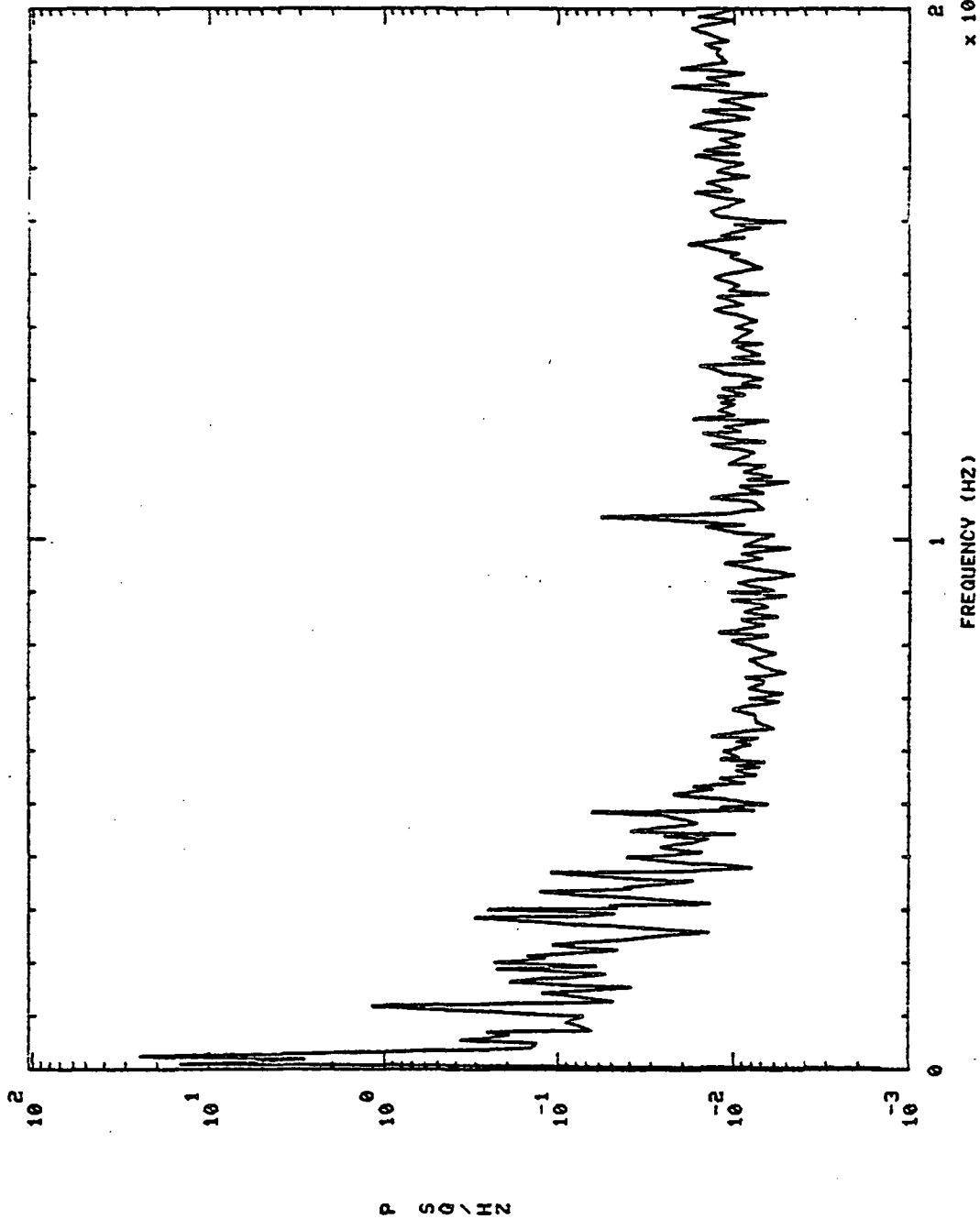
$2.4 \times 10^4$

901301 HPOP DS PR

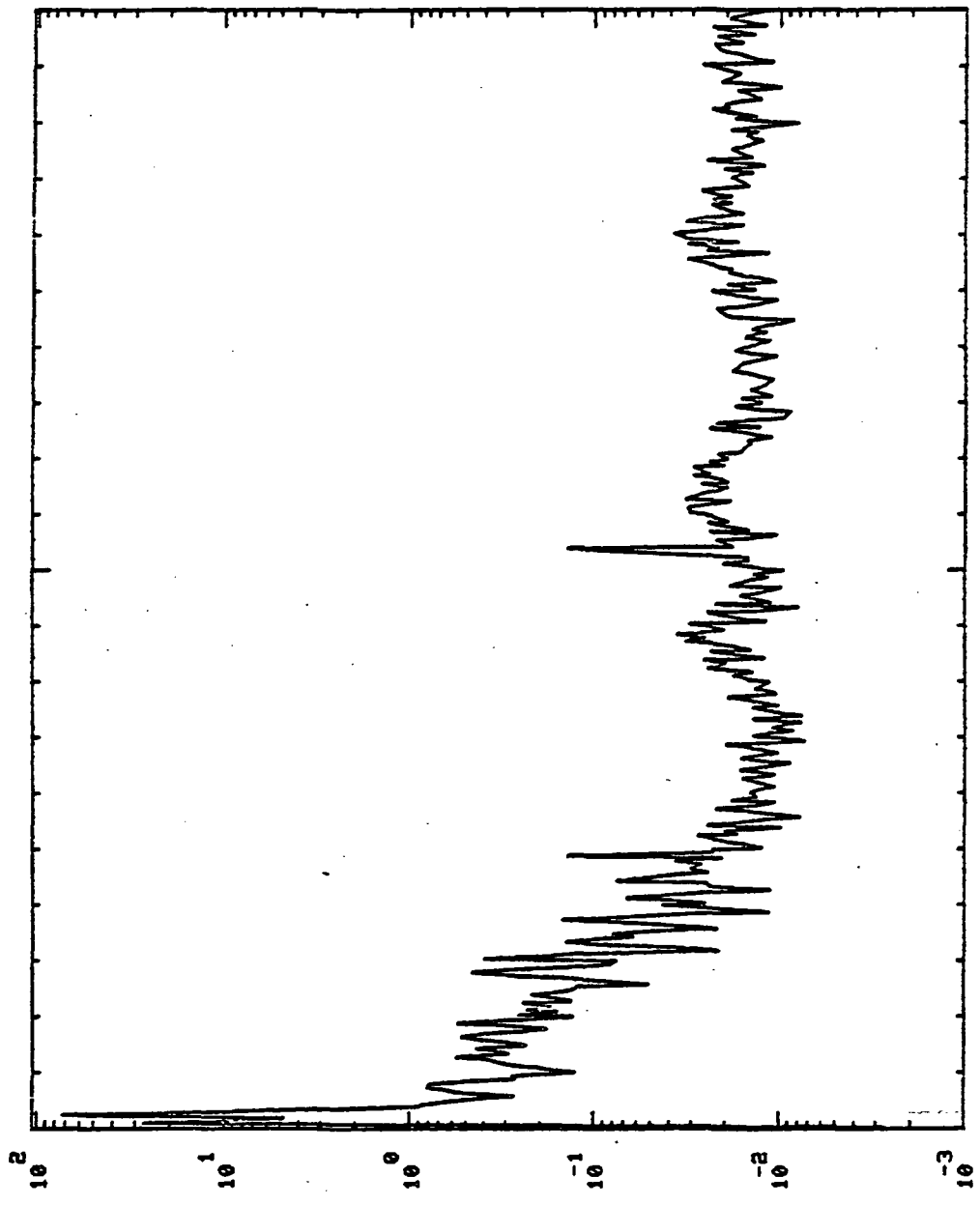
S+ 250.01H0,'S



901301 HPOP D5 PR S+ 400.01H0, 'S



901301 PBP DS PR S+ 100.01H0,'S



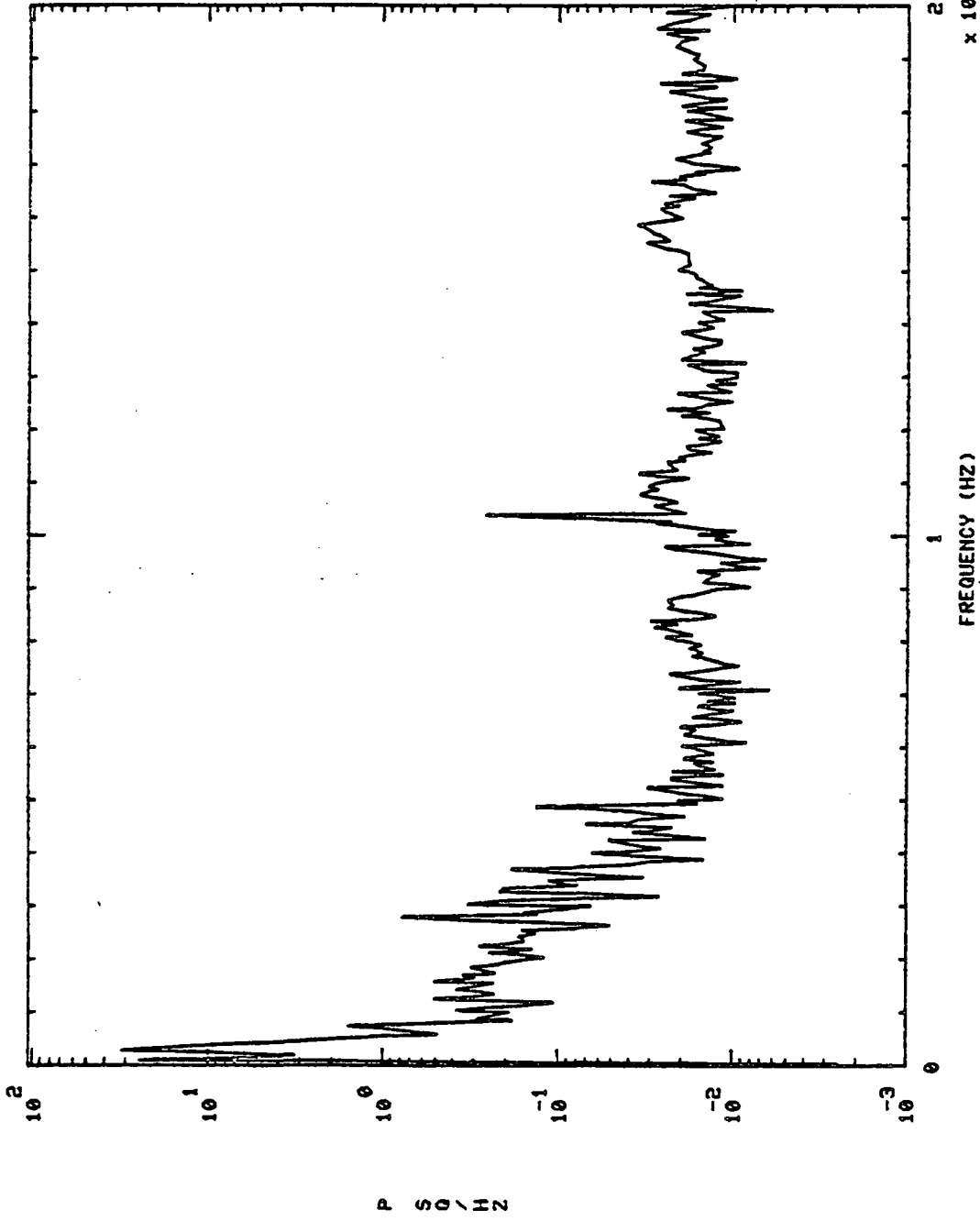
$10^2$   
 $\times 10^4$

FREQUENCY (HZ)

P S G / HZ

St 250.0140, 'S

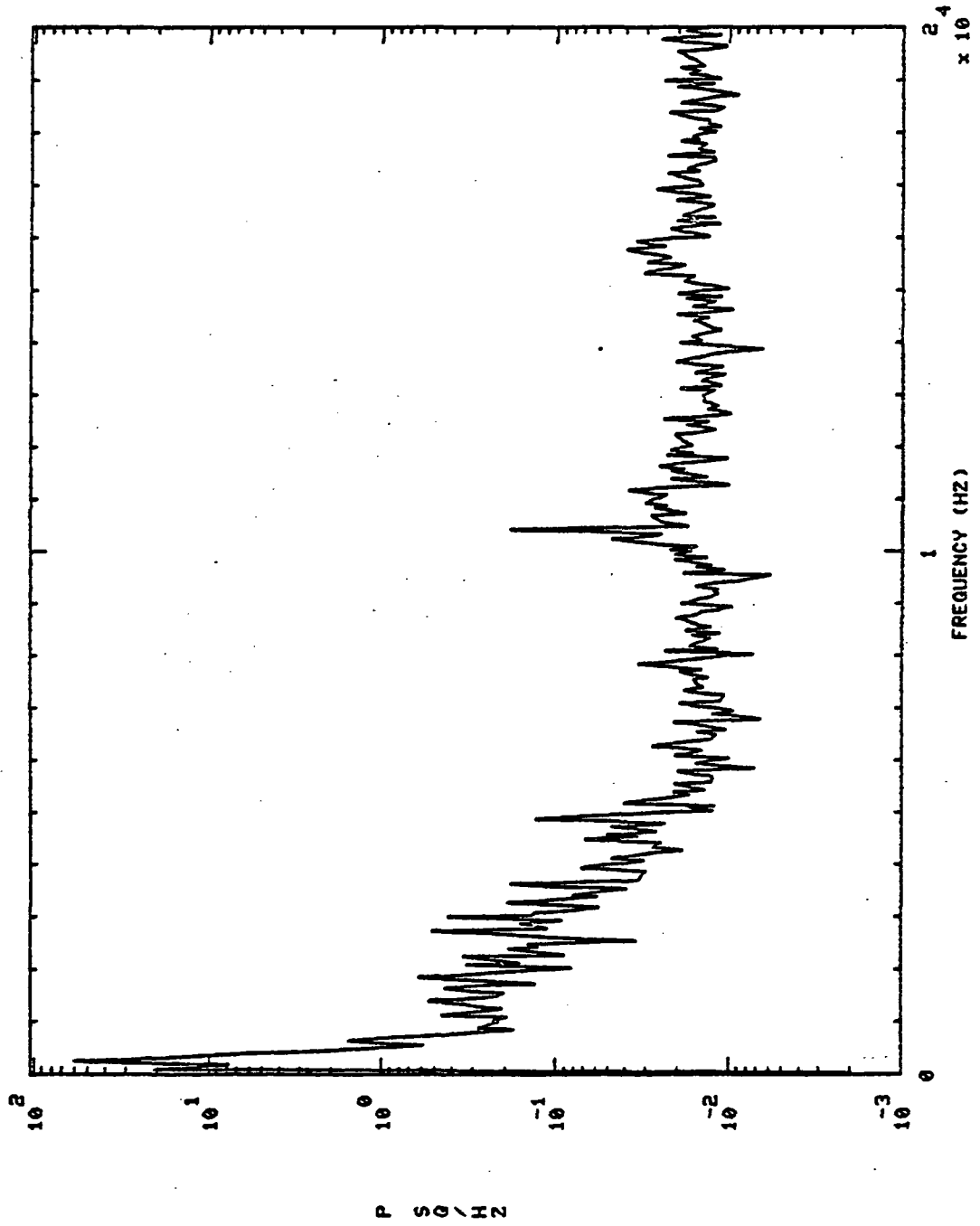
901301 PBP DS PR





901301 PBP DS PR S+ 400.01H0,'S

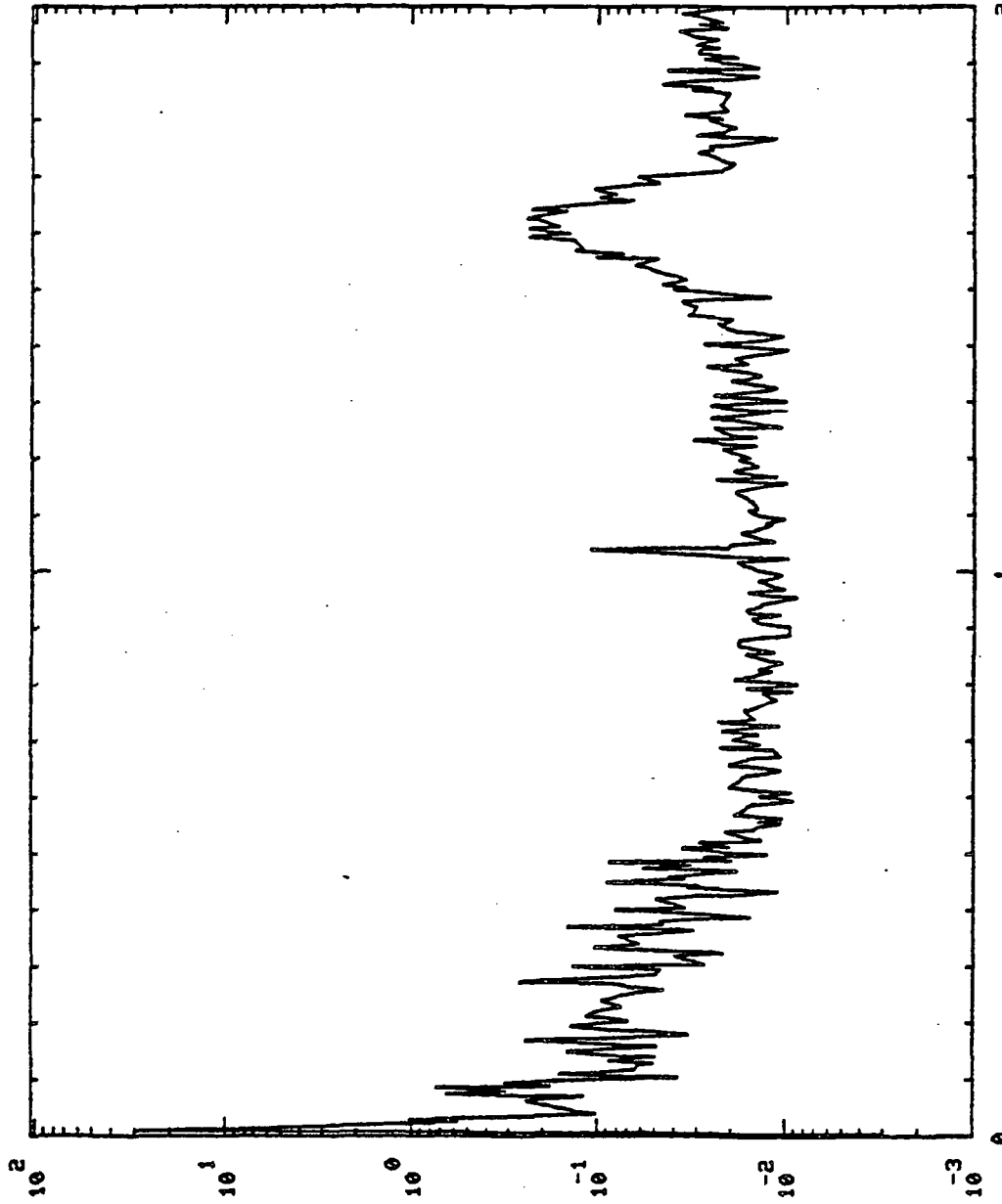
901301 PBP DS PR



S+ 100.01H0,'S

OPB PC PR DC

901301



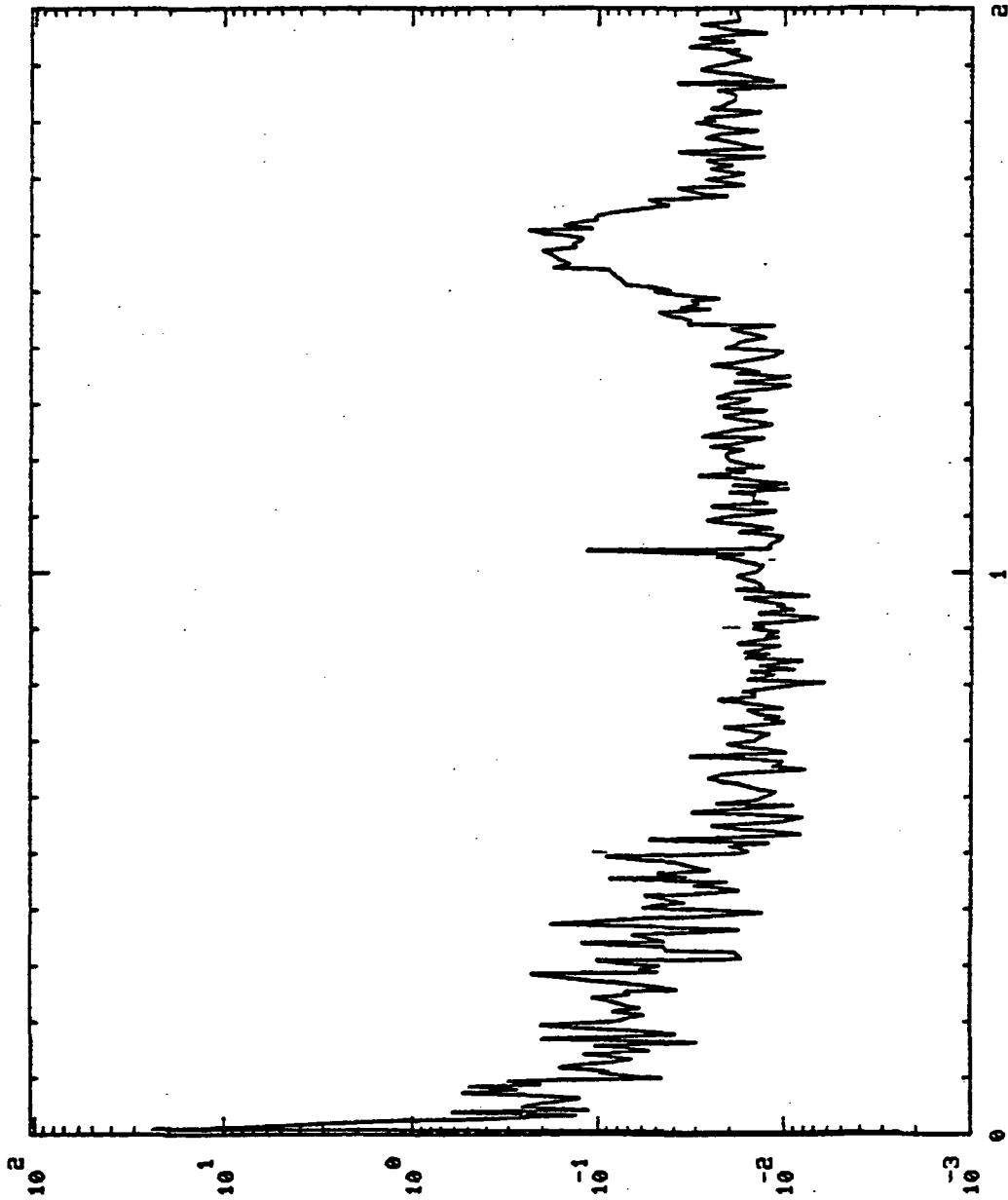
P SQ \ IN

FREQUENCY (HZ)

$2.4 \times 10^4$

S+ 250.01H0,'S

901301 OPB PC PR DC



$10^4$

FREQUENCY (HZ)

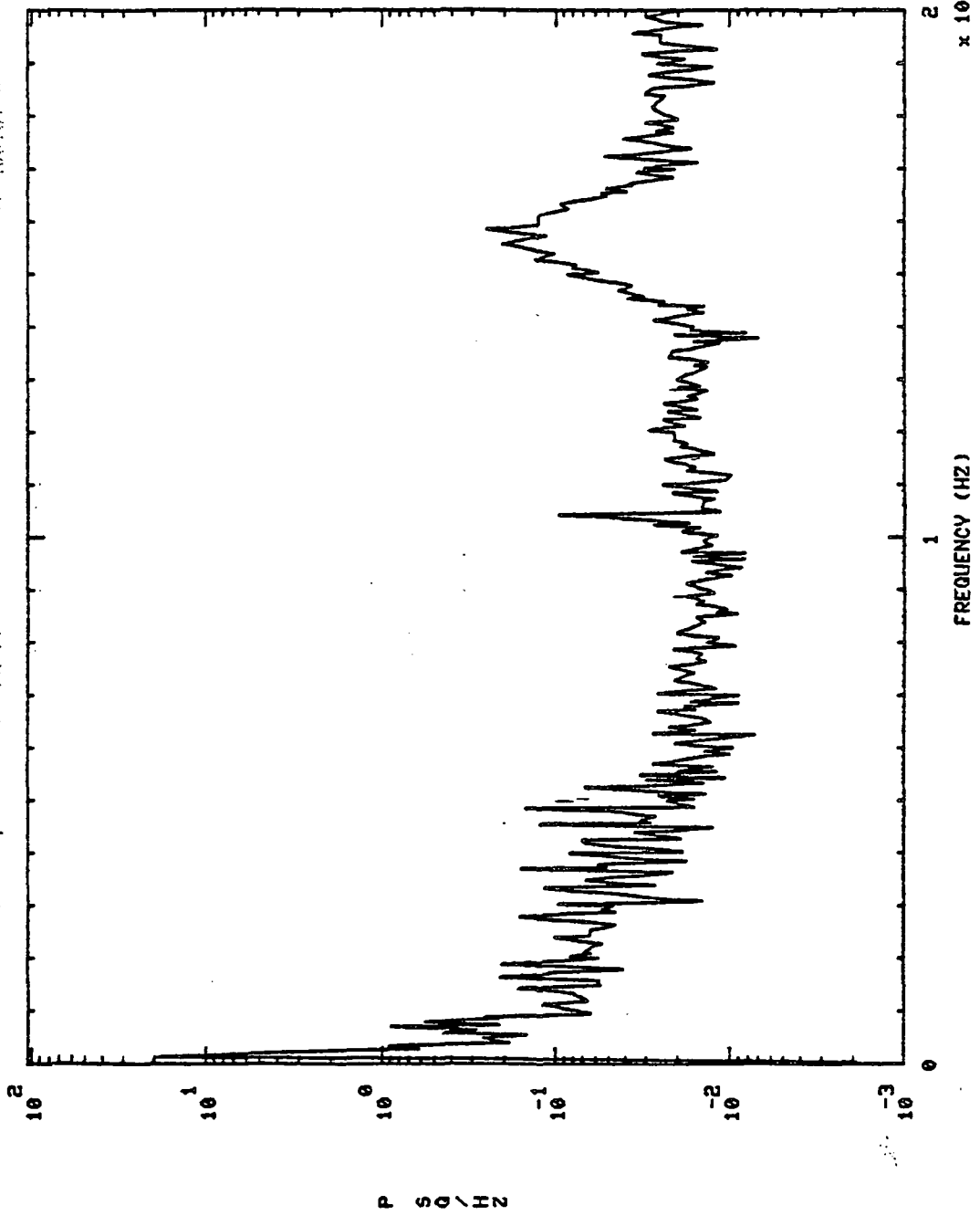
1

0

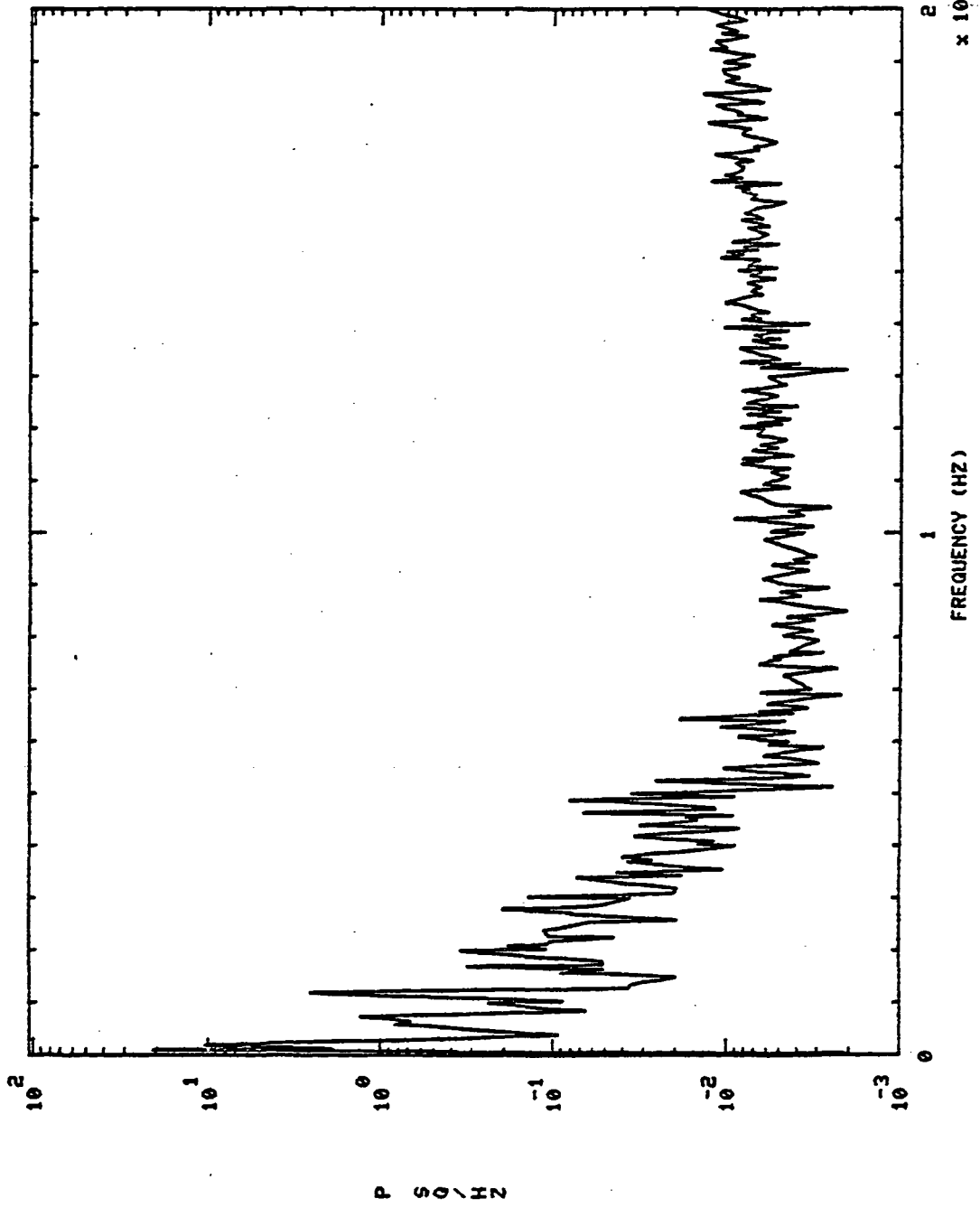
P 50 \ HZ

901301, OPB PC PR DC

St 100.0110, 'S



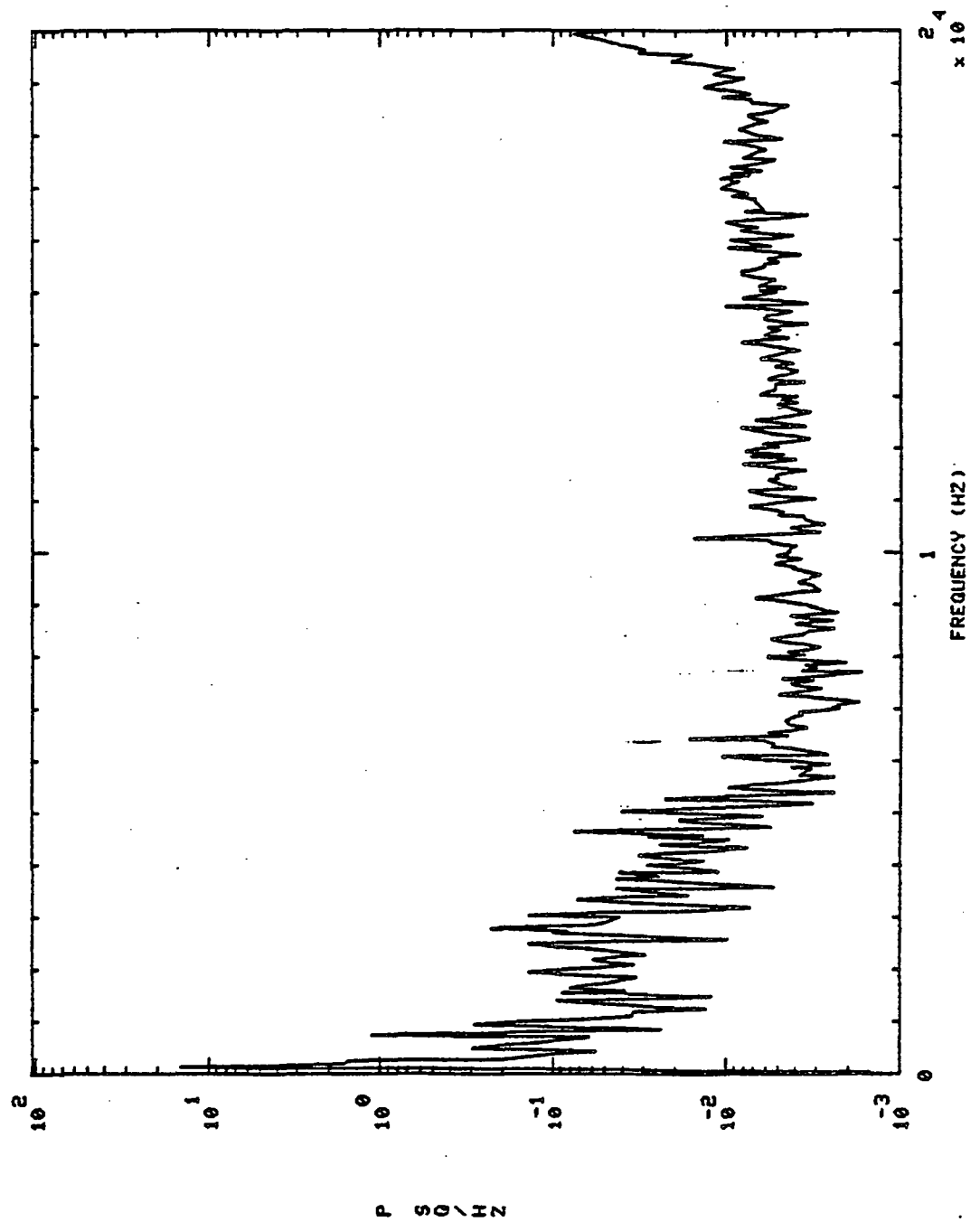
901303 HPOP DS PR S+ 5.01H0,'S



S+ 30.01H0,'S

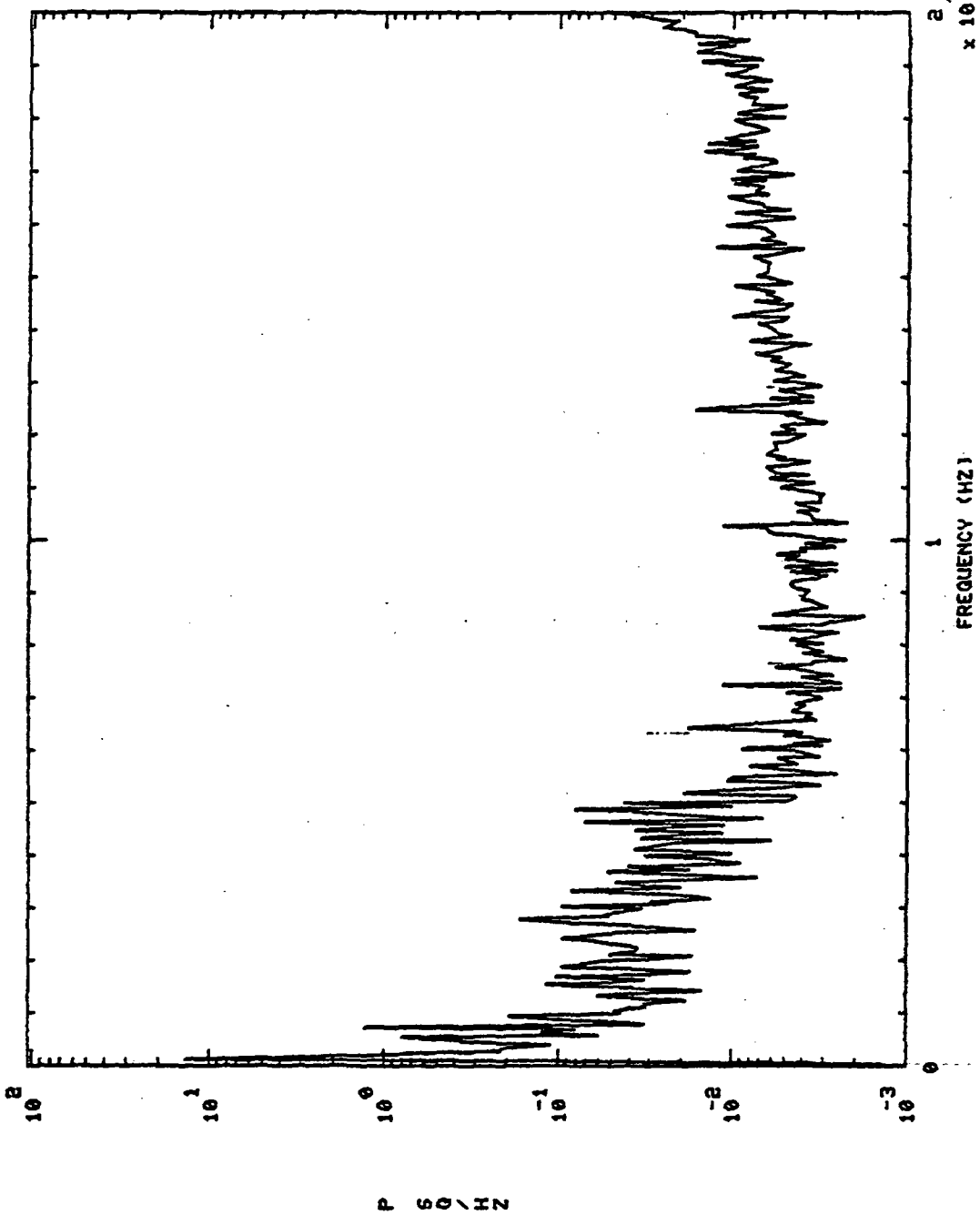
MPOP DS PR

901303



S+ 45.01HG, 'S

901303 HPOP DS PR

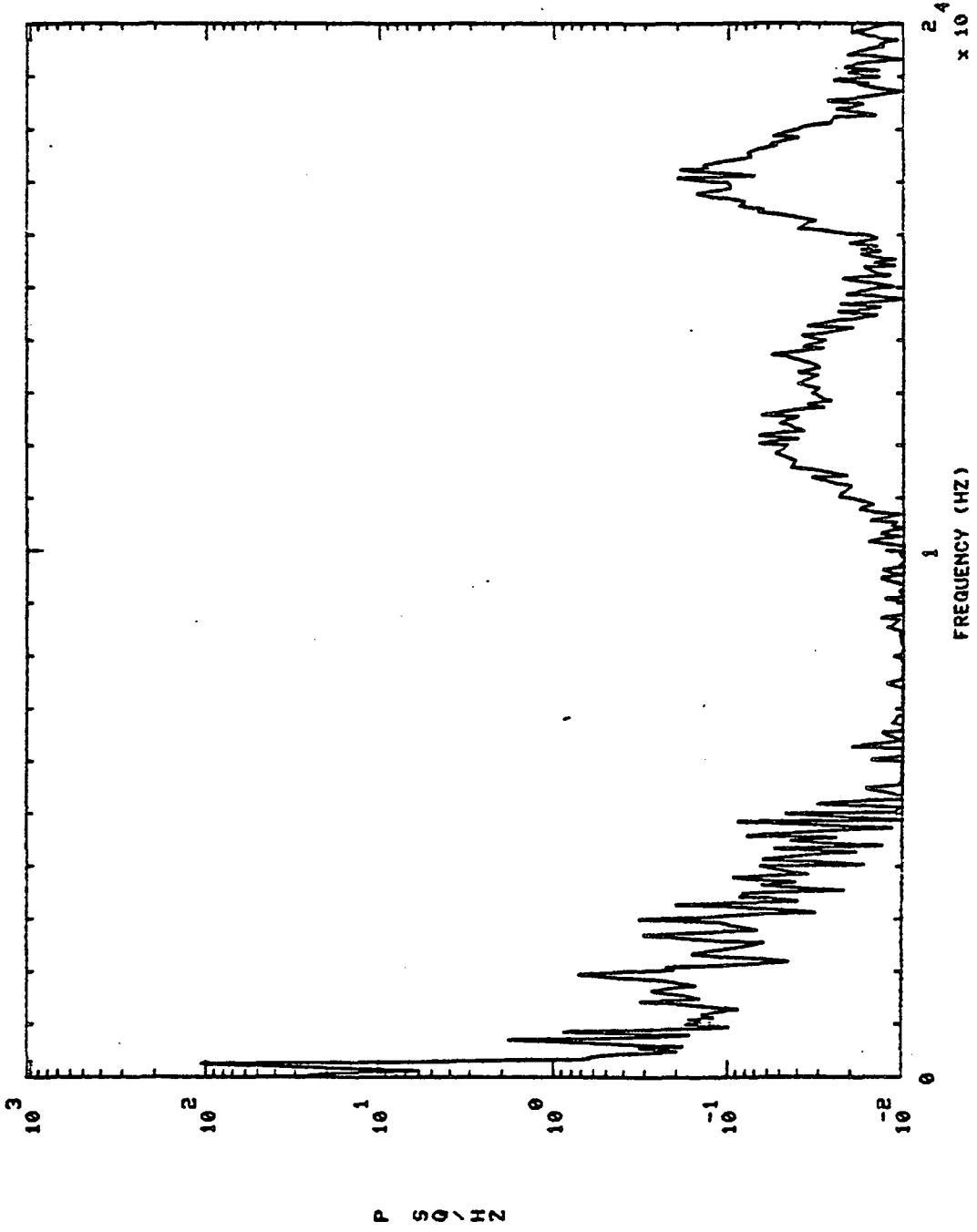


$10^4$   
 $\times 10$

FREQUENCY (HZ)

S+ 5.01110,'S

901303 PBP DS PR

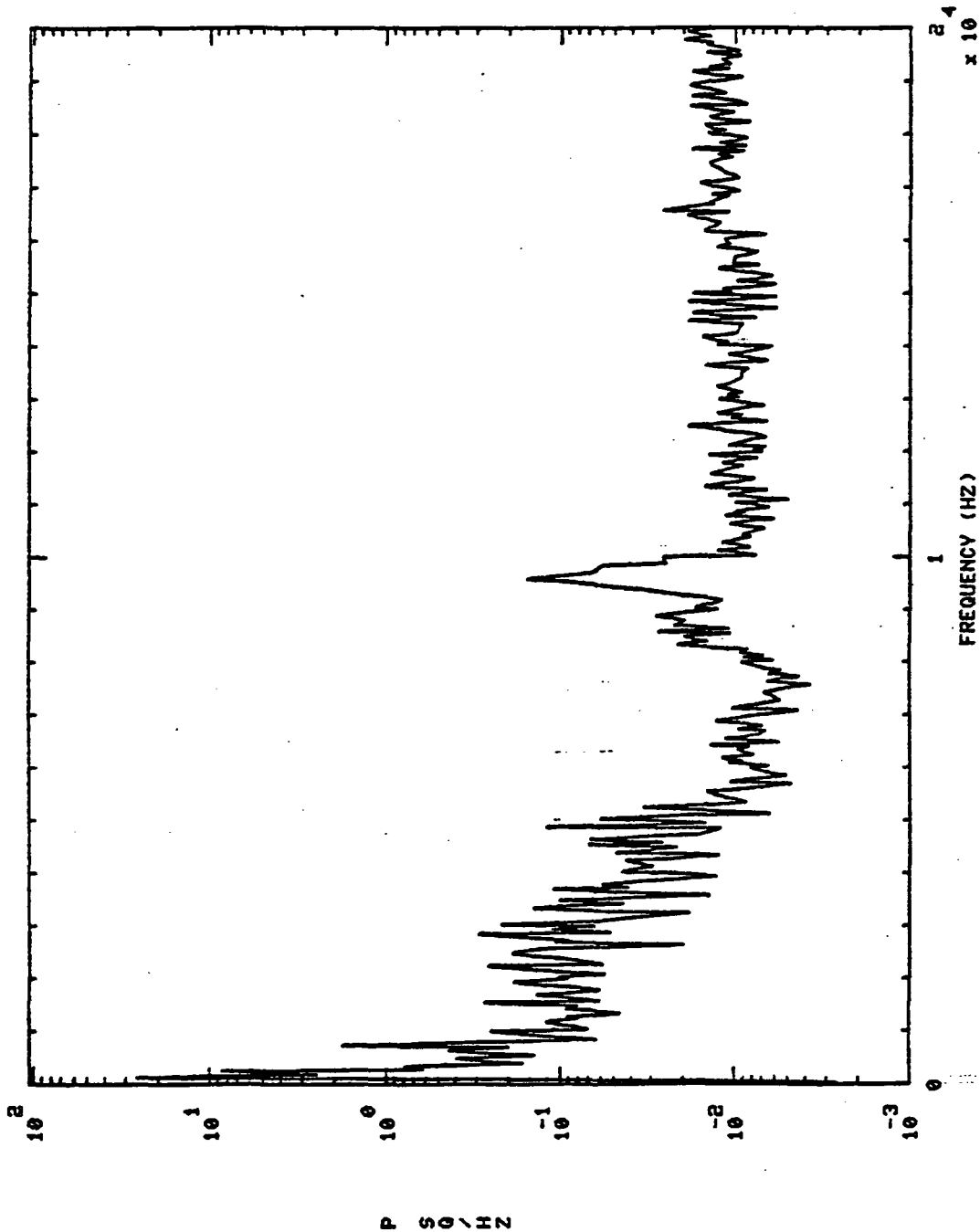




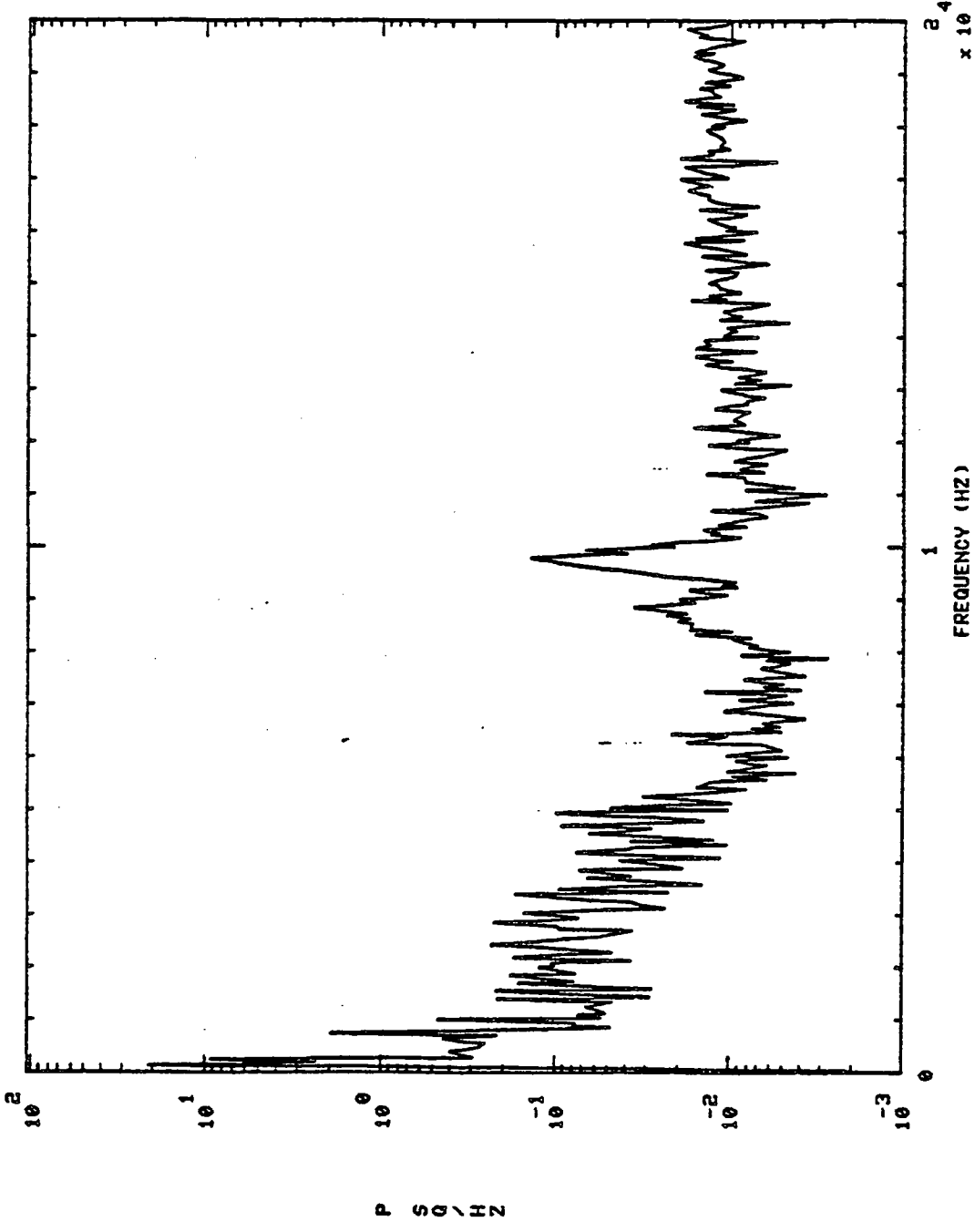
S+ 30.01H0,'S

PBP DS PR

901303

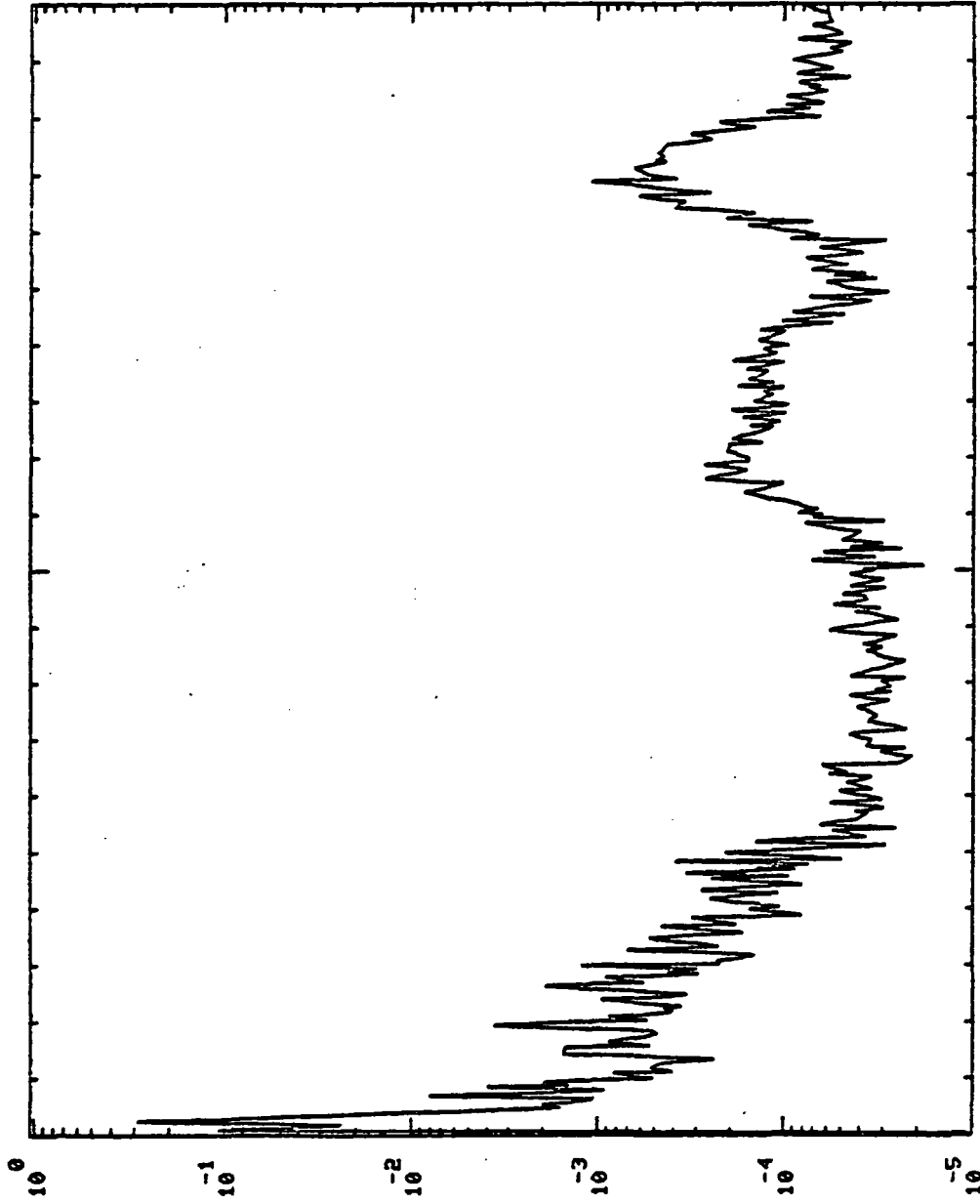


901303 PBP DS PR 5+ 45.01H0,'9



5+ 5.01H0,'S

901303 HPOP IN PR



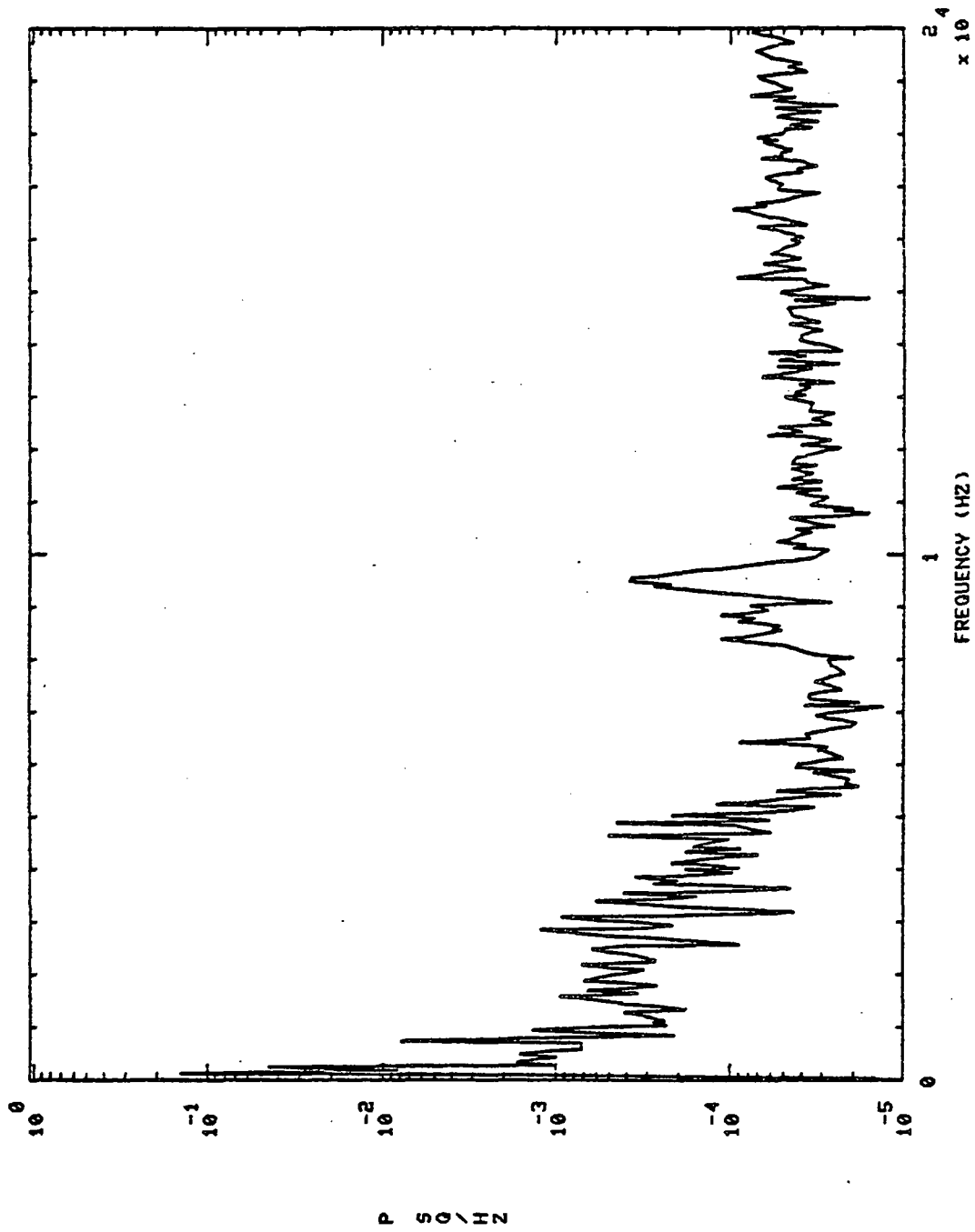
P S / HZ

24  
x 10<sup>4</sup>

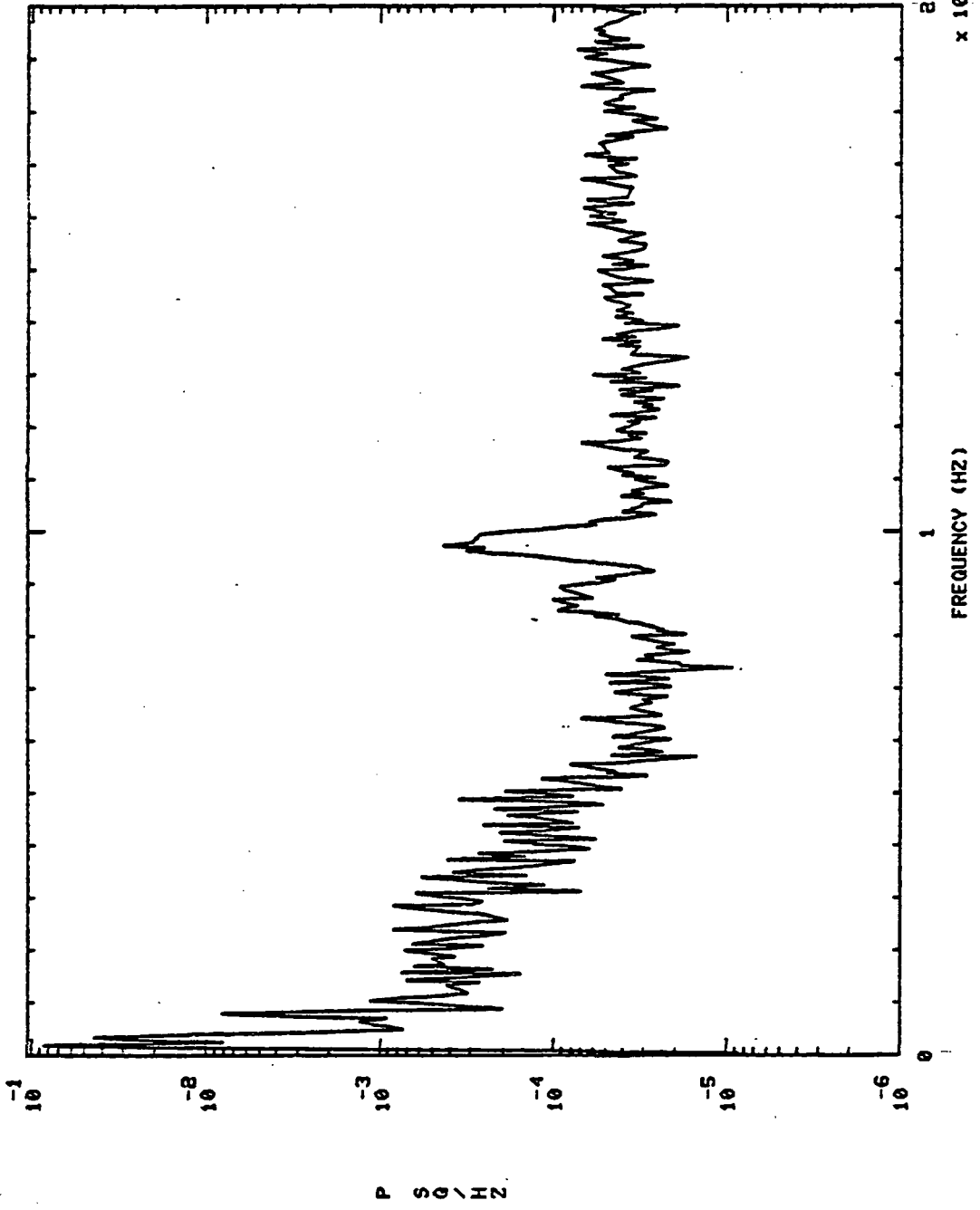
1  
FREQUENCY (HZ)

S+ 30.01H0,'S

901303 HPOP IN PR



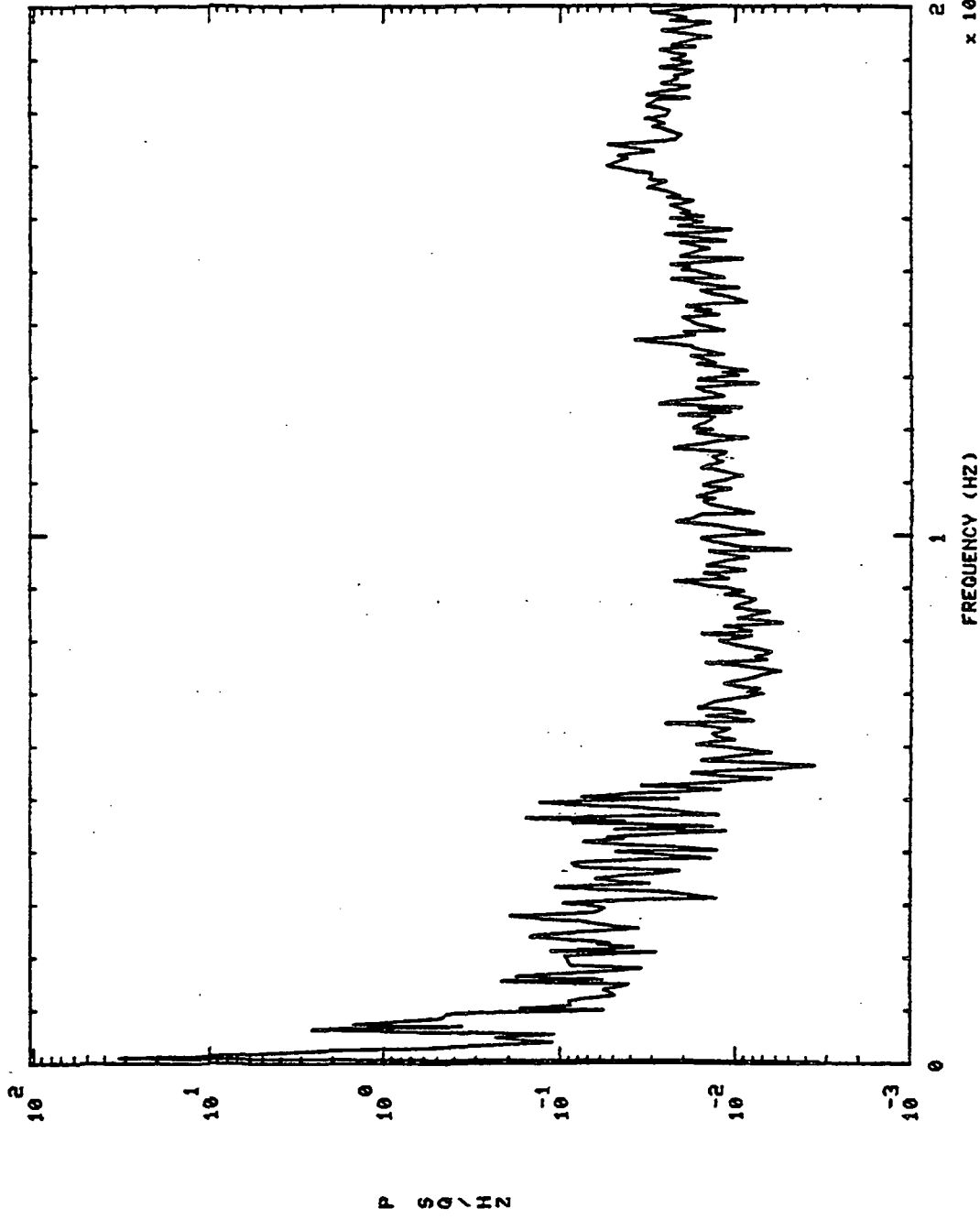
901303 HPOP IN PR S+ 45.01H0,'S



S+ 5.01H0,'S

OPB PC PR DC

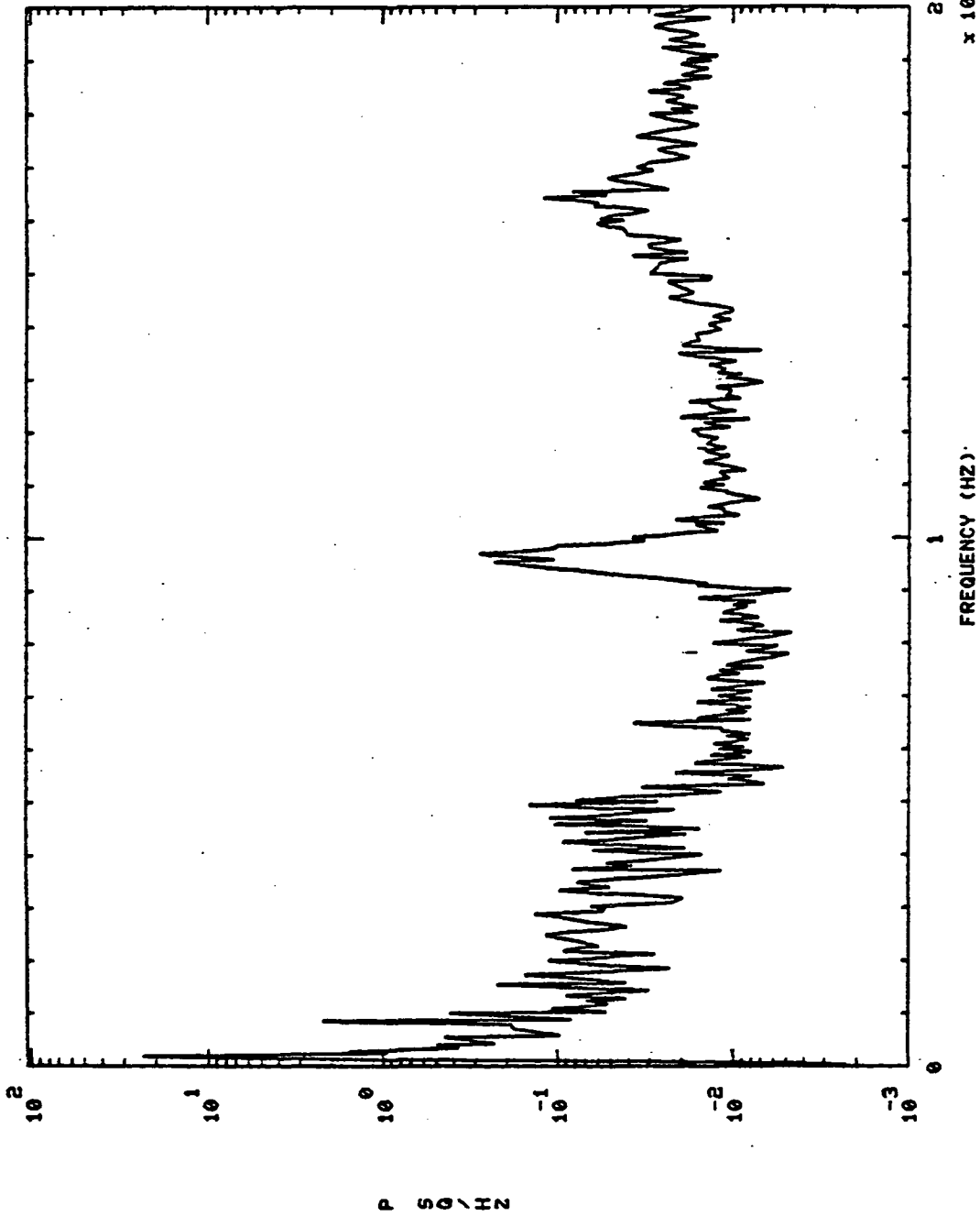
901303



S+ 30.01H0,'S

OPB PC PR DC

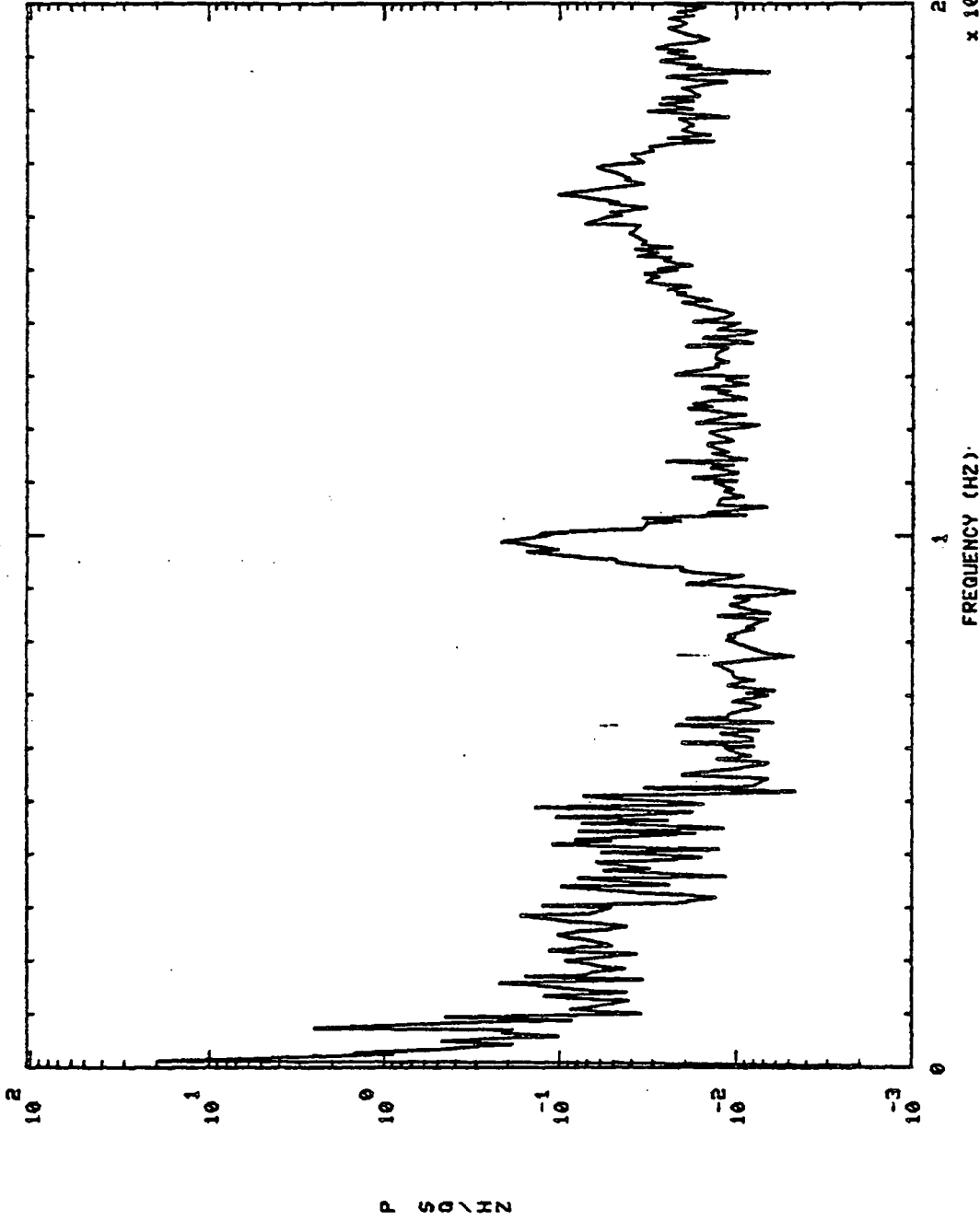
901303



S+ 45.01H0,'S

OPB PC PR DC

901303



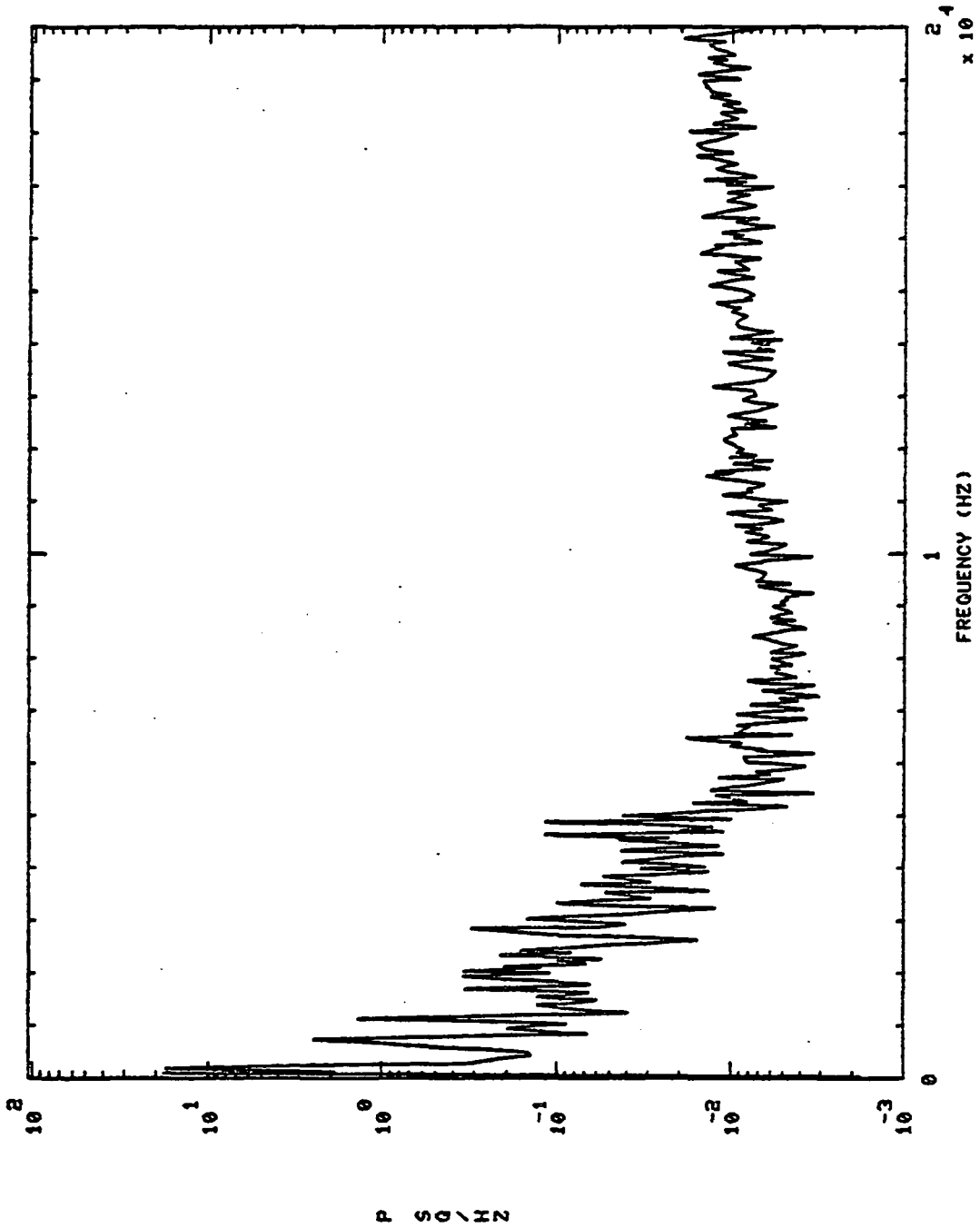
$10^4$   
 $\times 10^0$

FREQUENCY (HZ)



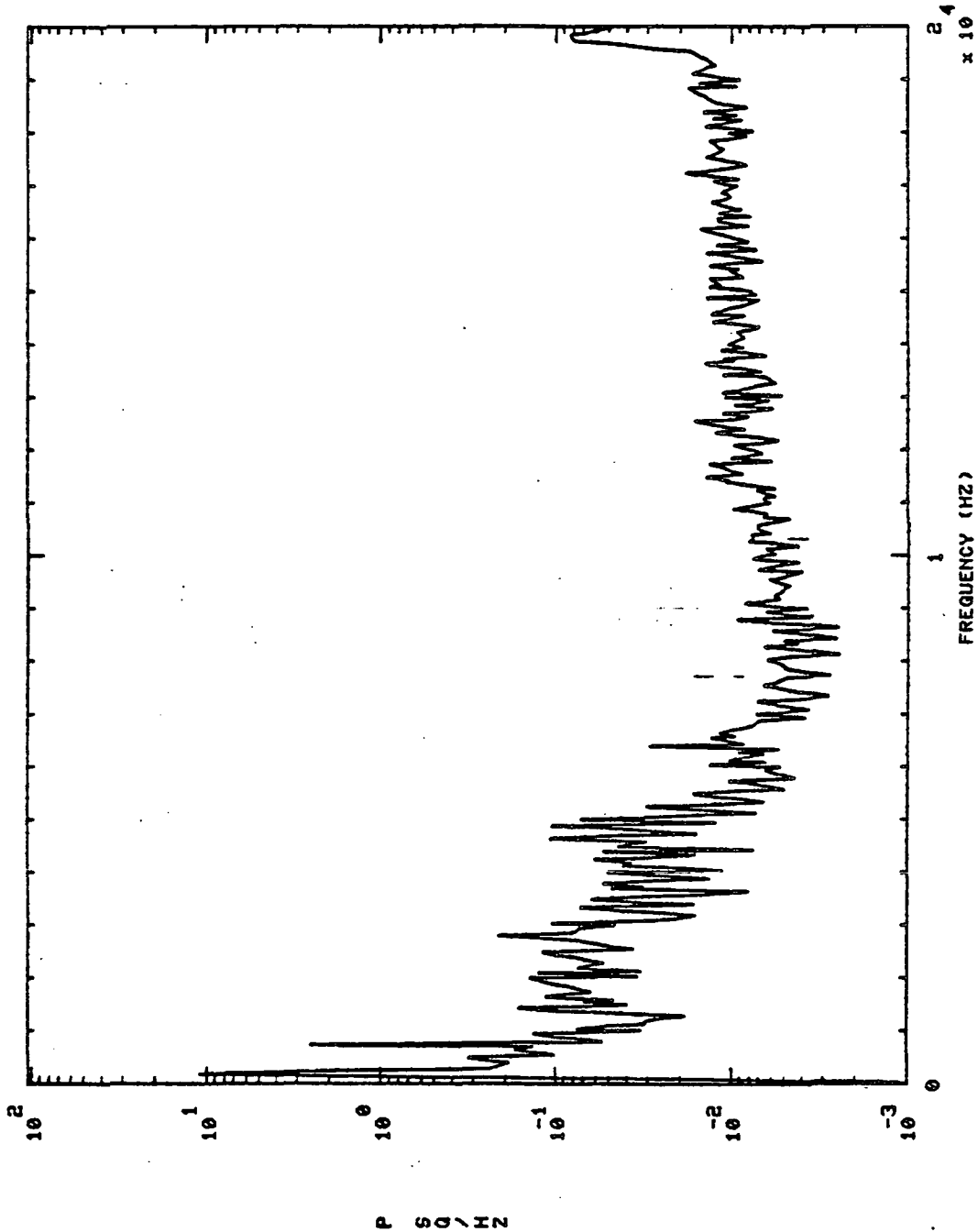
S+ 5.01H0,'S

901304 HPOP DS PR



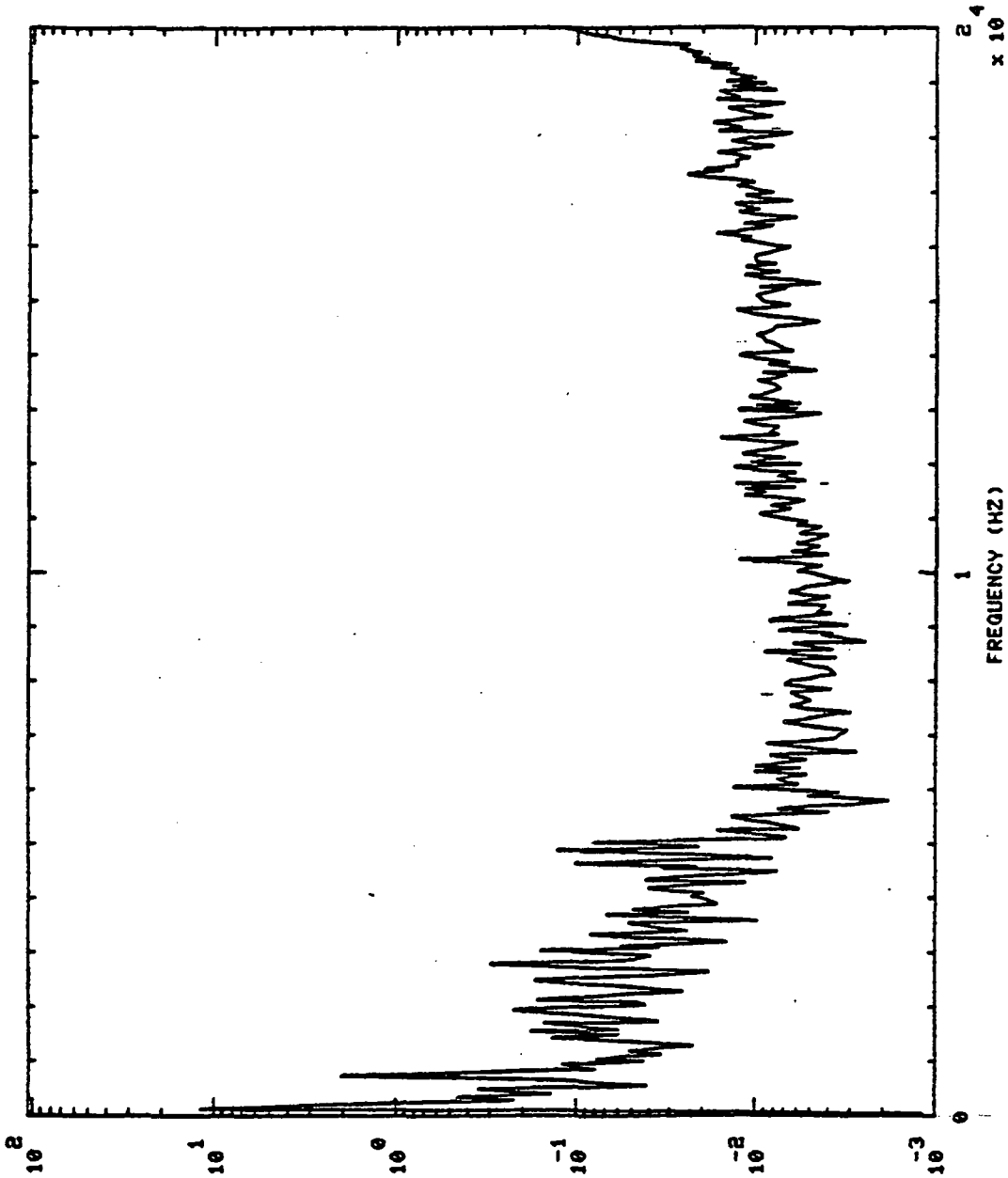
S+ 50.01H0.'S

901304 HPOP DS PR



St 75.0140,'S

901304 MPOP DS PR



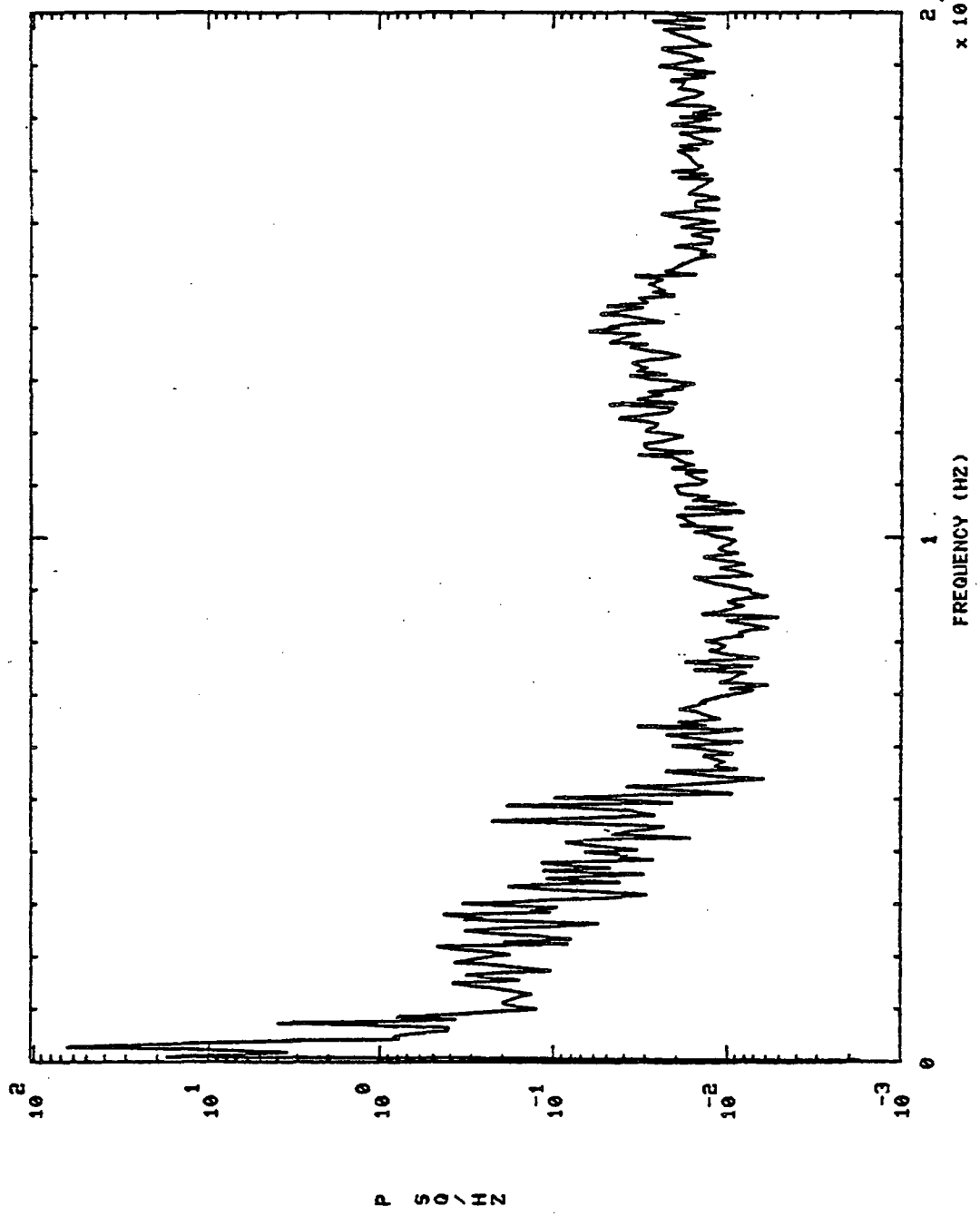
P S\N

FREQUENCY (HZ)

x 10<sup>4</sup>

S+ 5.01H0,'S

901304 PBP DS PR



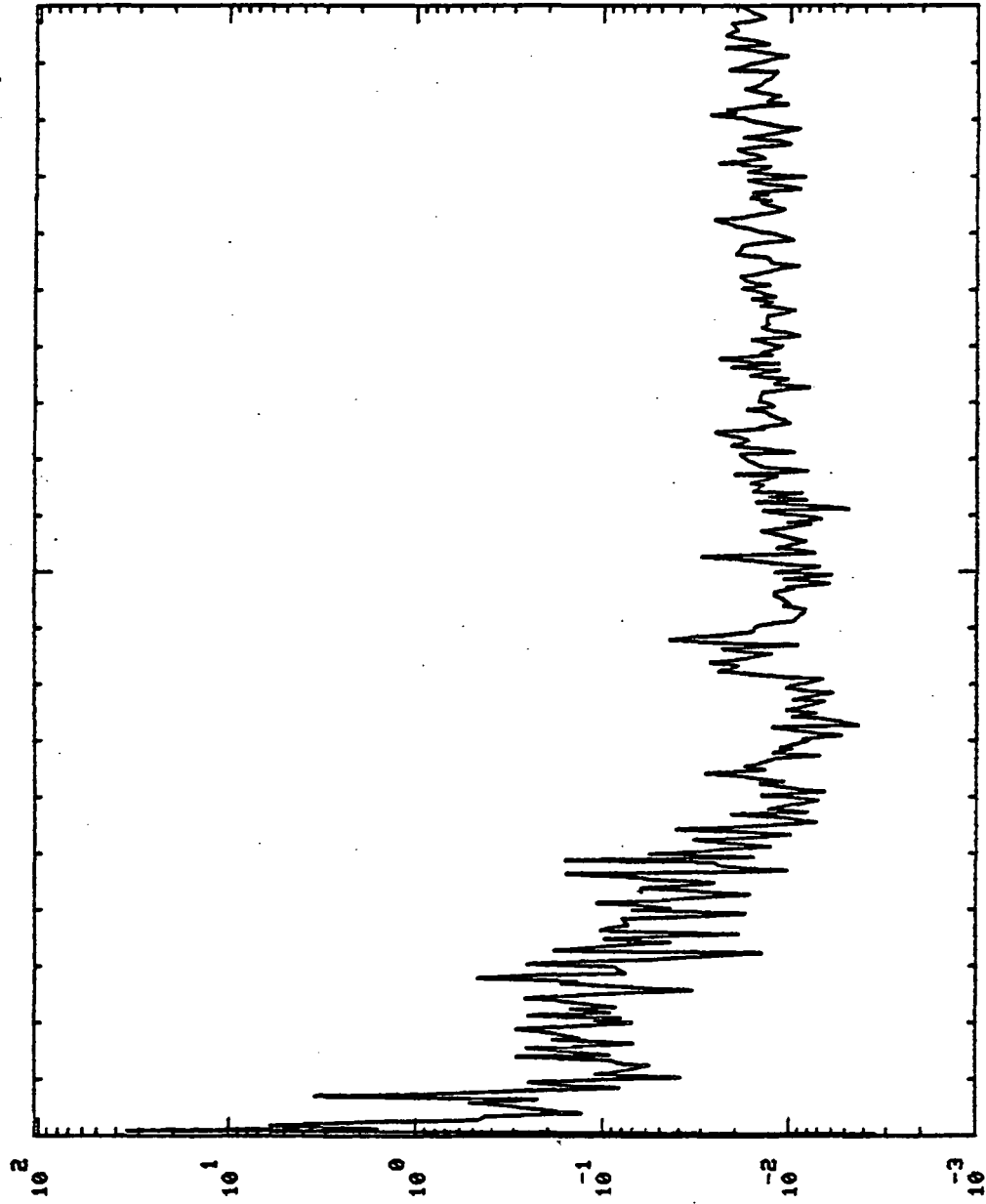
901304 PBP DS PR S+ 50.01H0,'S

901304 PBP DS PR

901304

PBP DS PR

S+ 50.01H0,'S



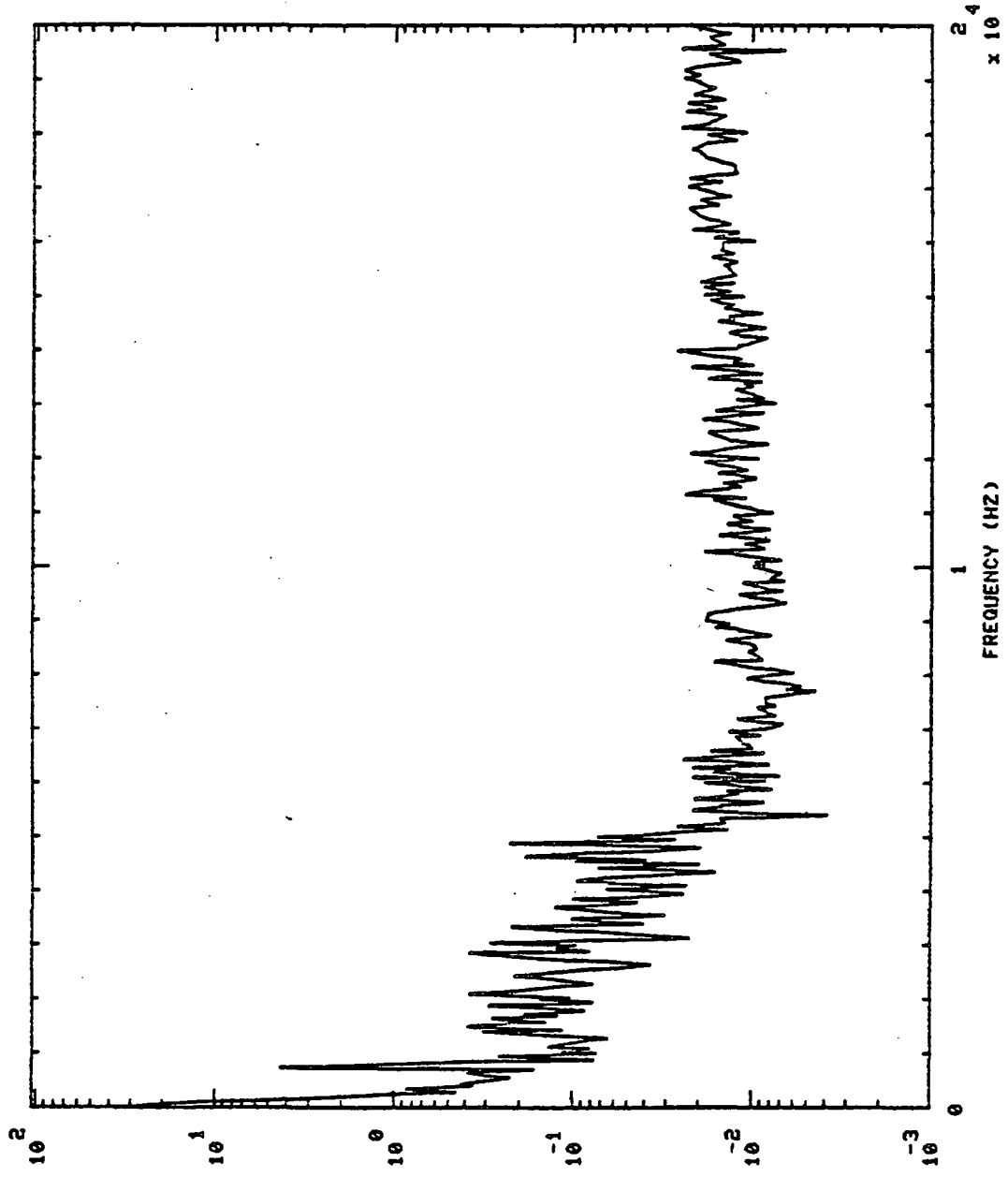
P S G / HZ

10<sup>4</sup>  
x 10

FREQUENCY (HZ)

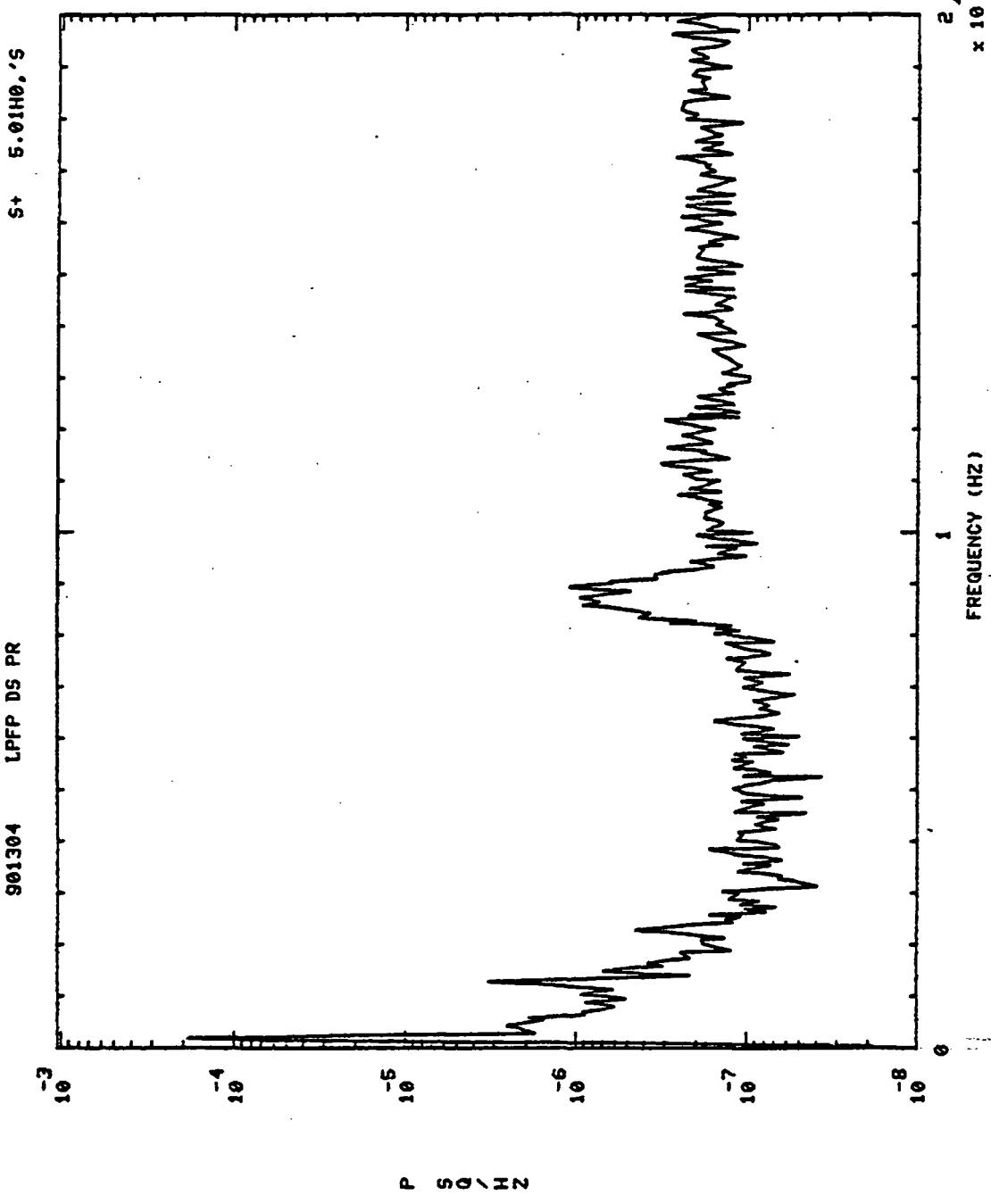
S+ 75.0 JHD, 'S

901304 PBP DS PR

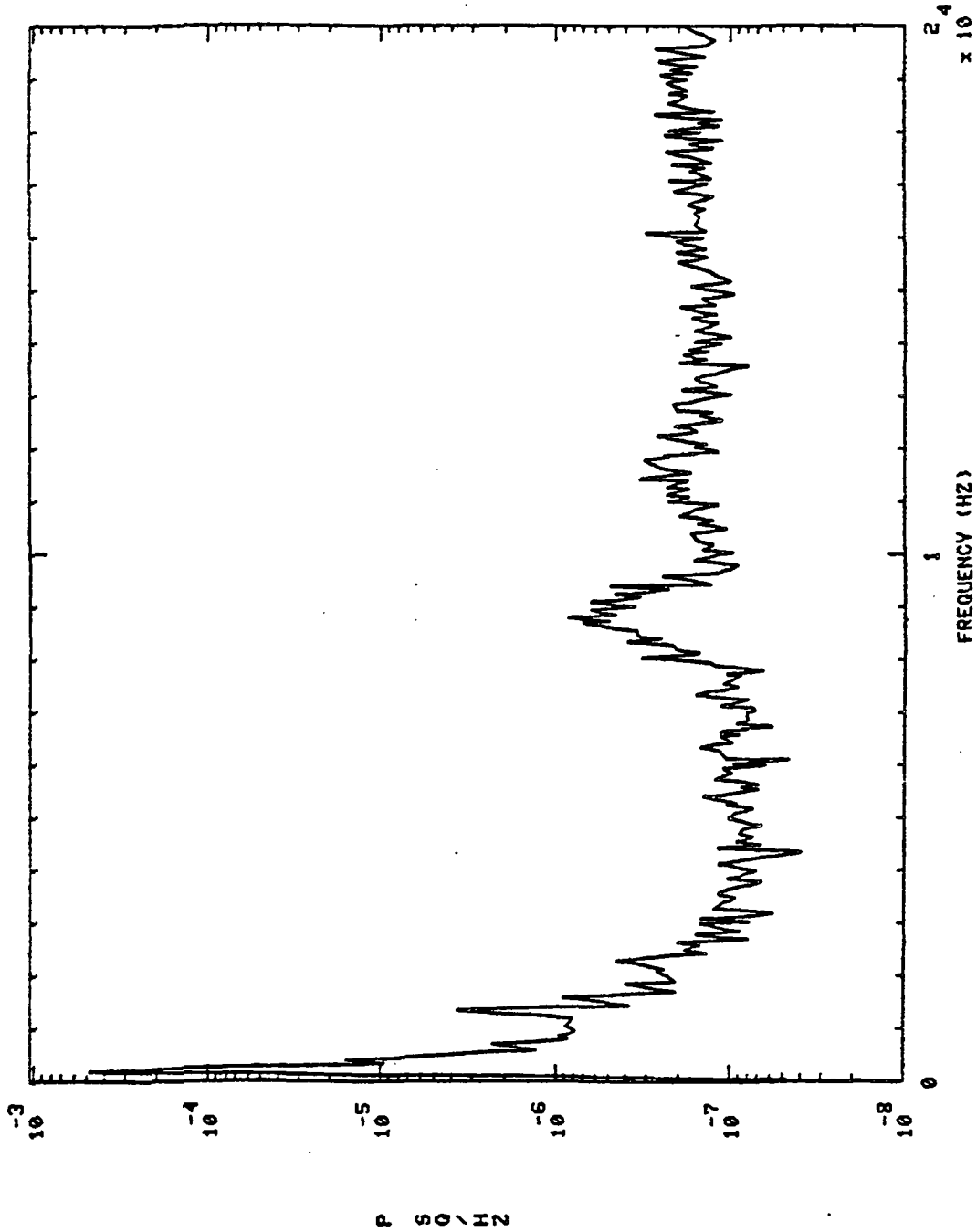


901304 LFPF DS PR S+ 5.01H0.'S

901304 LFPF DS PR

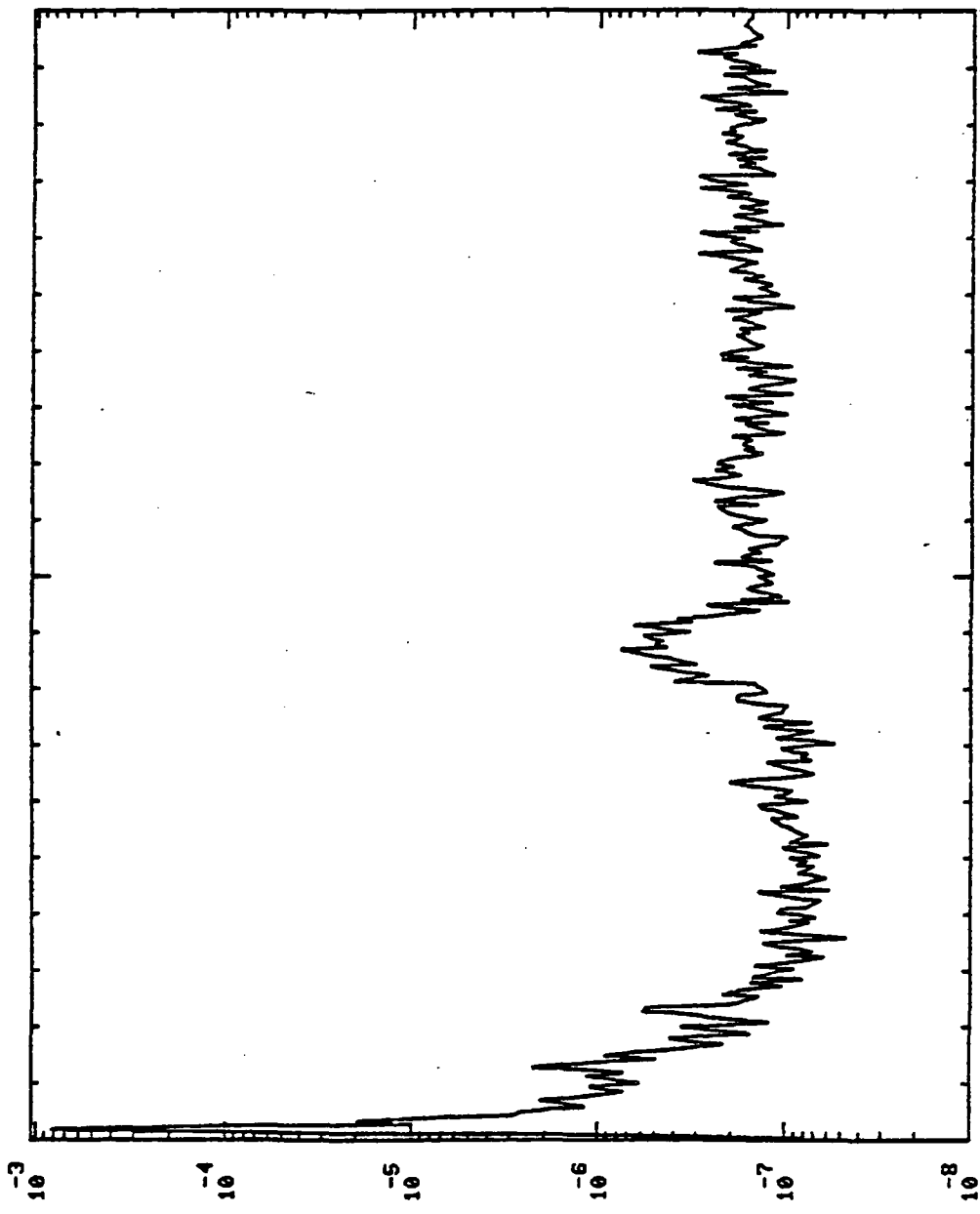


901304 LPFP DS PR S+ 50.01H0.'S





901304 LPFP DS PR S+ 75.01110,'S

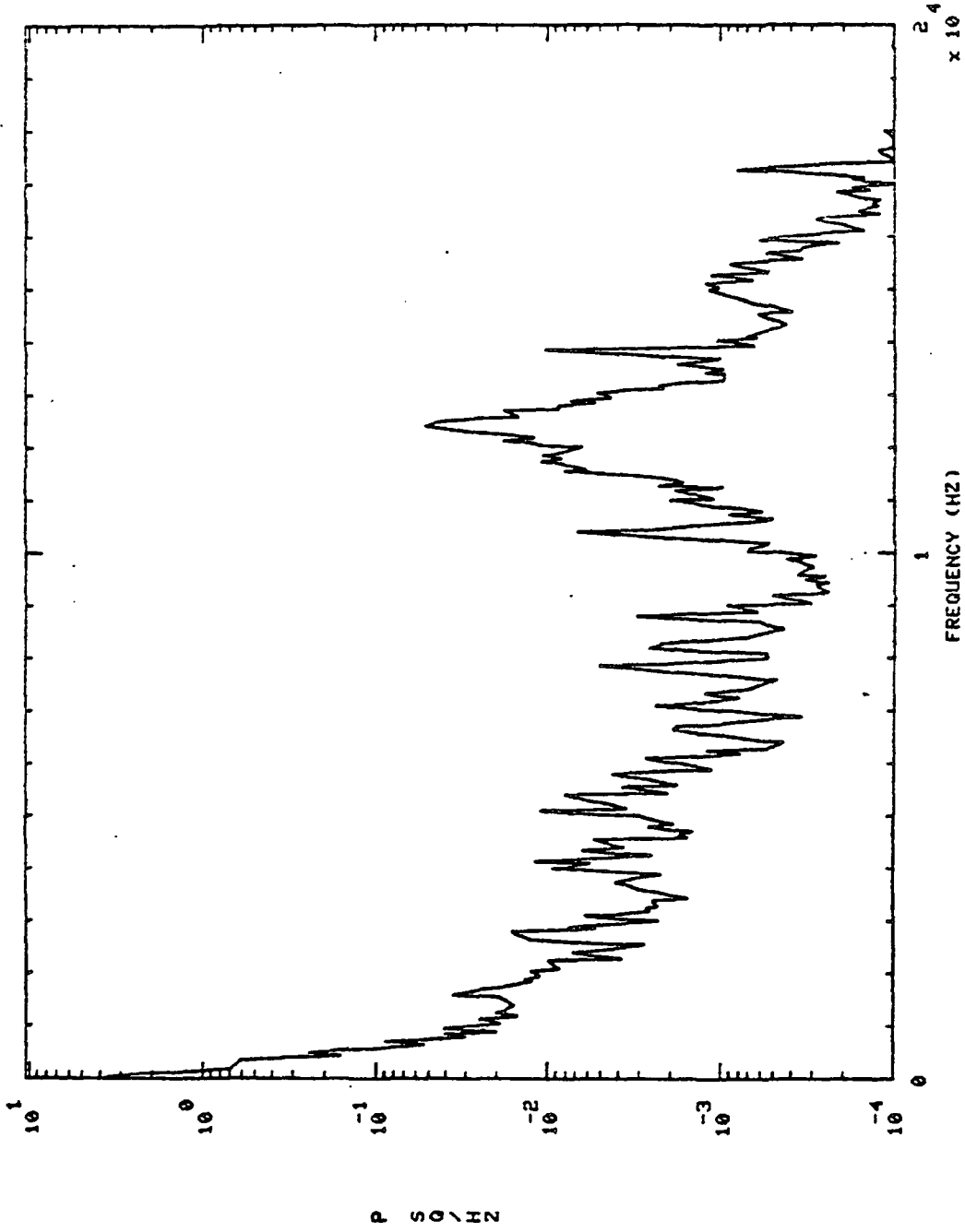


P SQ\HZ

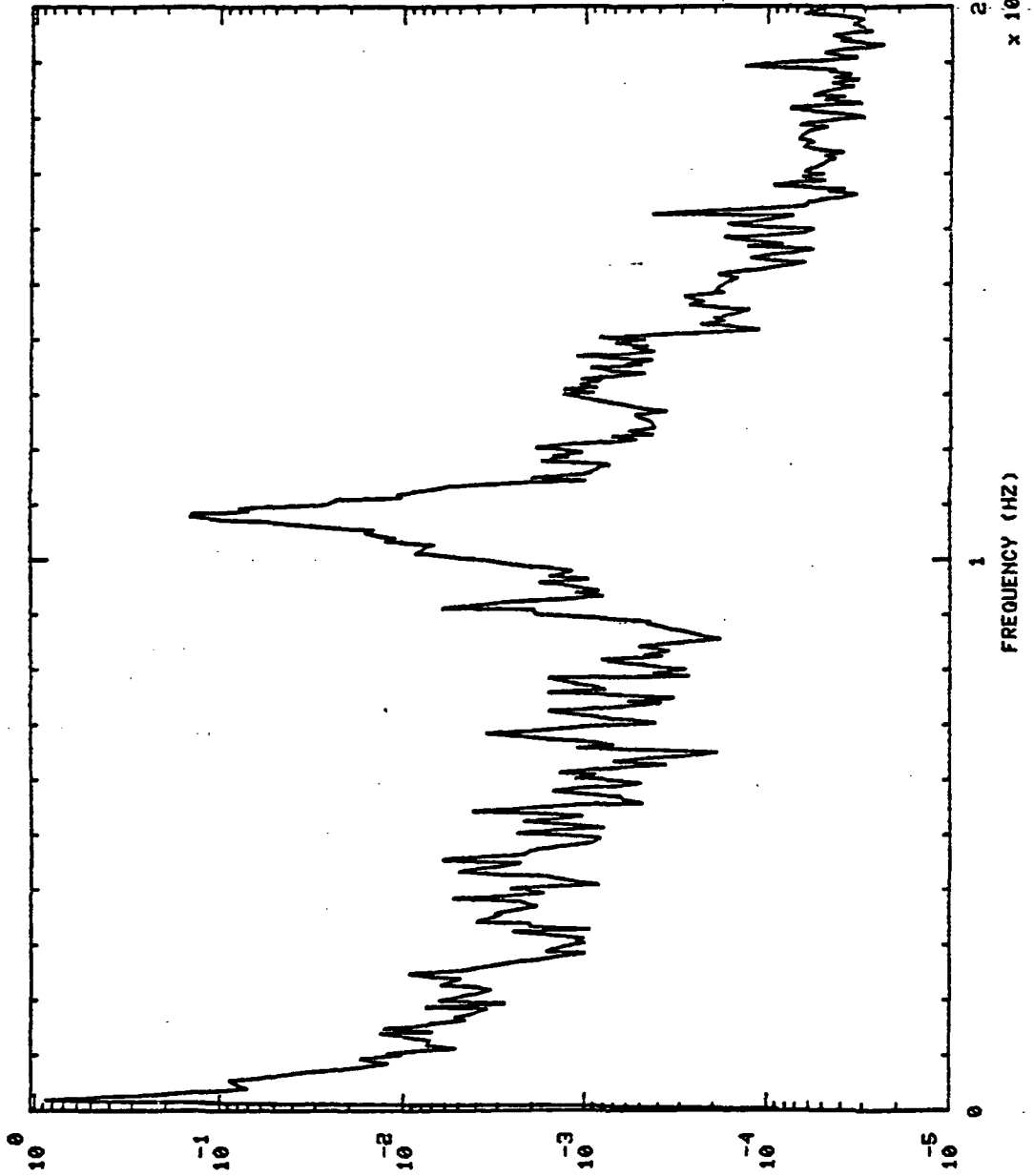
FREQUENCY (HZ)

2.4  
x 10<sup>4</sup>

901304 FPB FUEL MAN PR S+ 5.01H0,'S



901304 FPB FUEL MAN PR S+ 50.01H0,'S

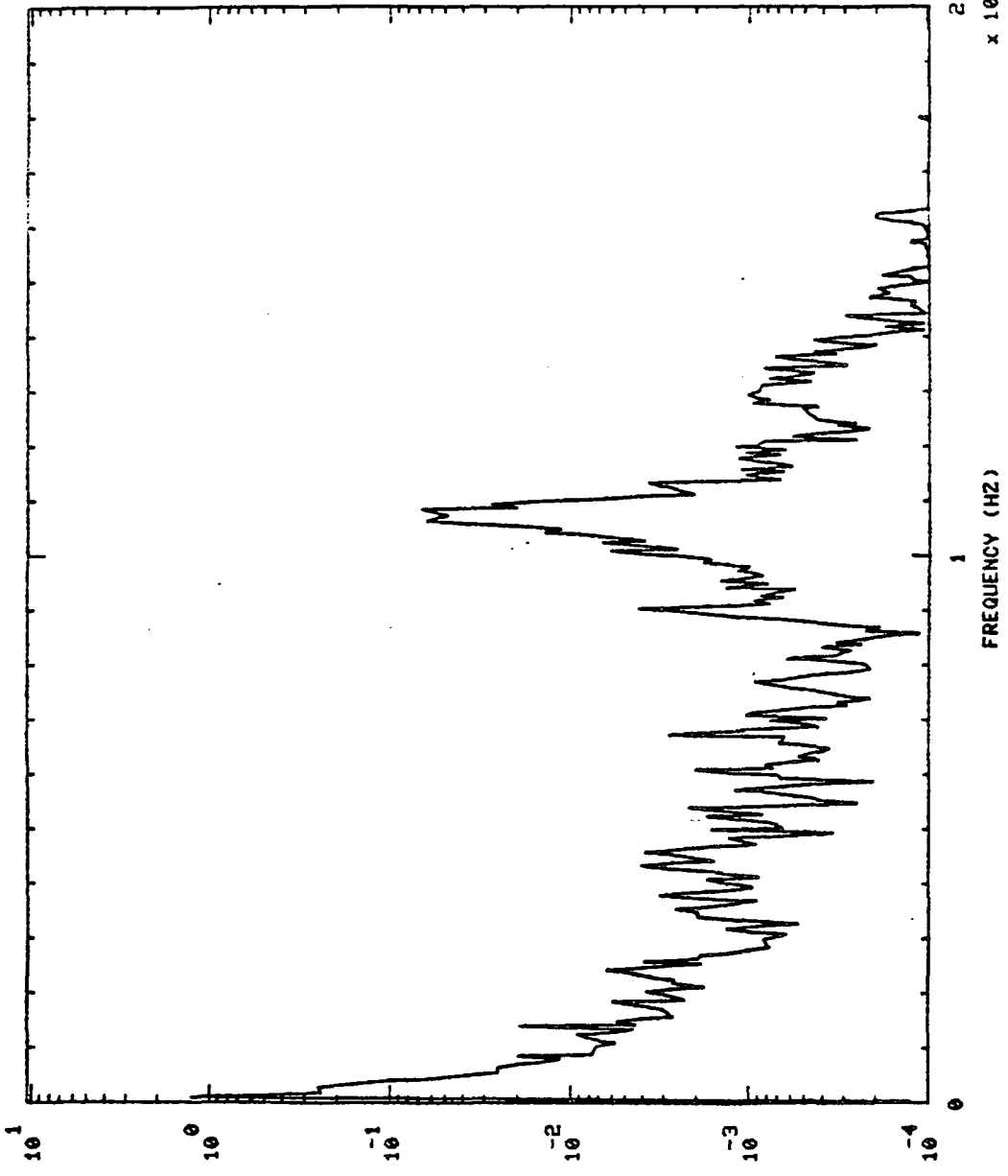


P S O I N

901304 FPB FUEL MAN PR S+ 75.01H0,'S

901304 FPB FUEL MAN PR

901304

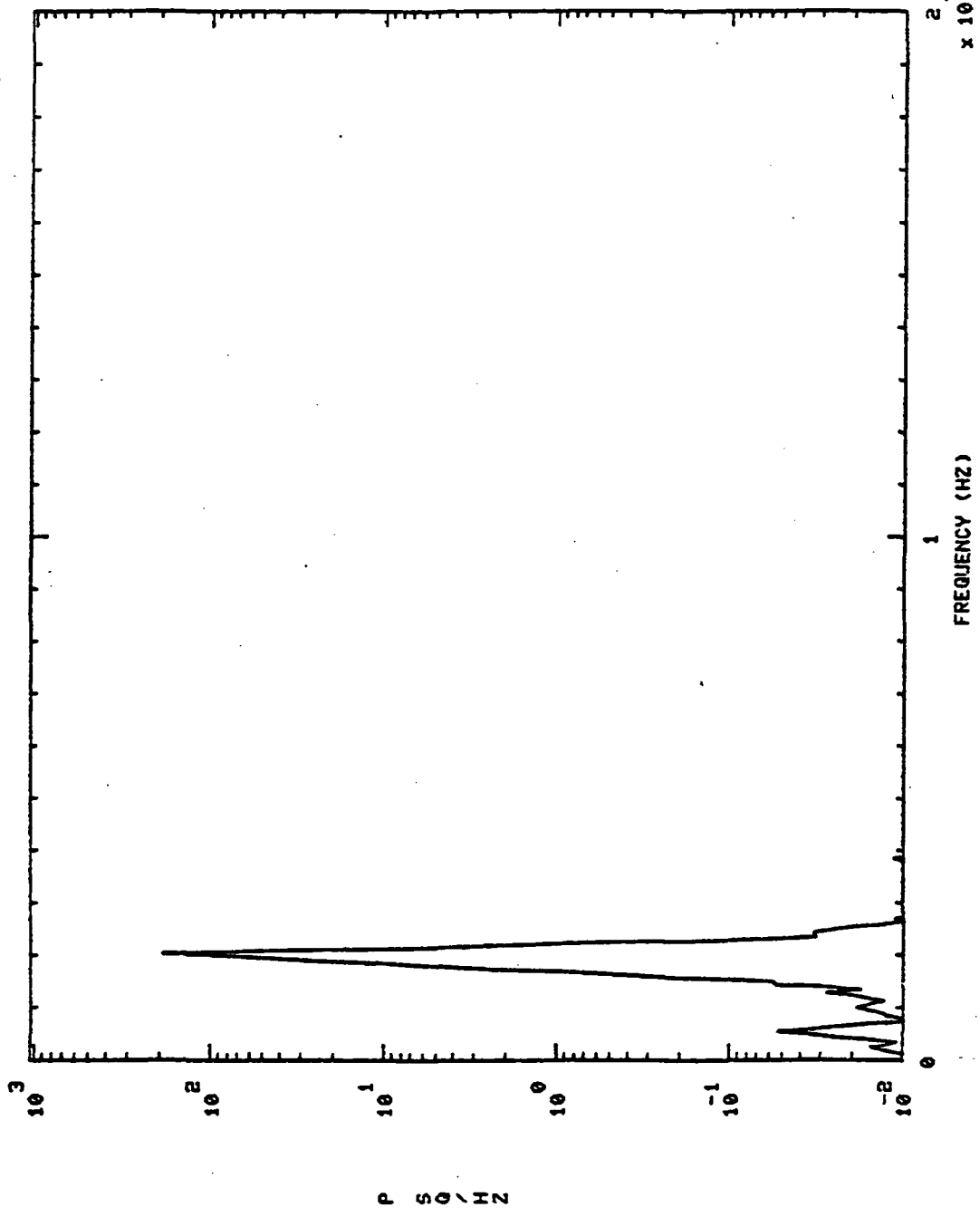


P S Q / H Z

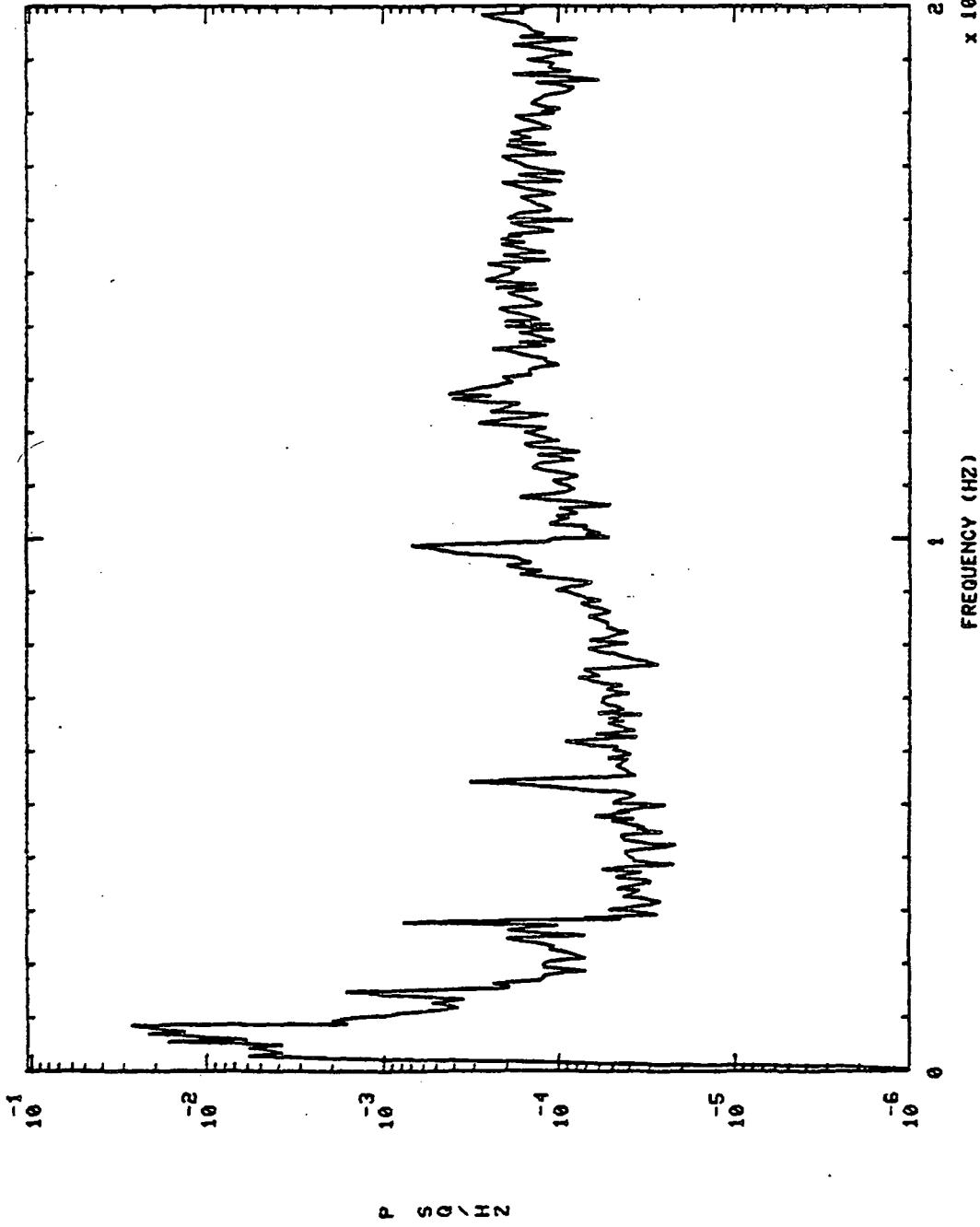
$10^{2.4}$   
x  $10^0$

FREQUENCY (H Z)

901304 MFOP IN PR S+ 5.01H0,'S

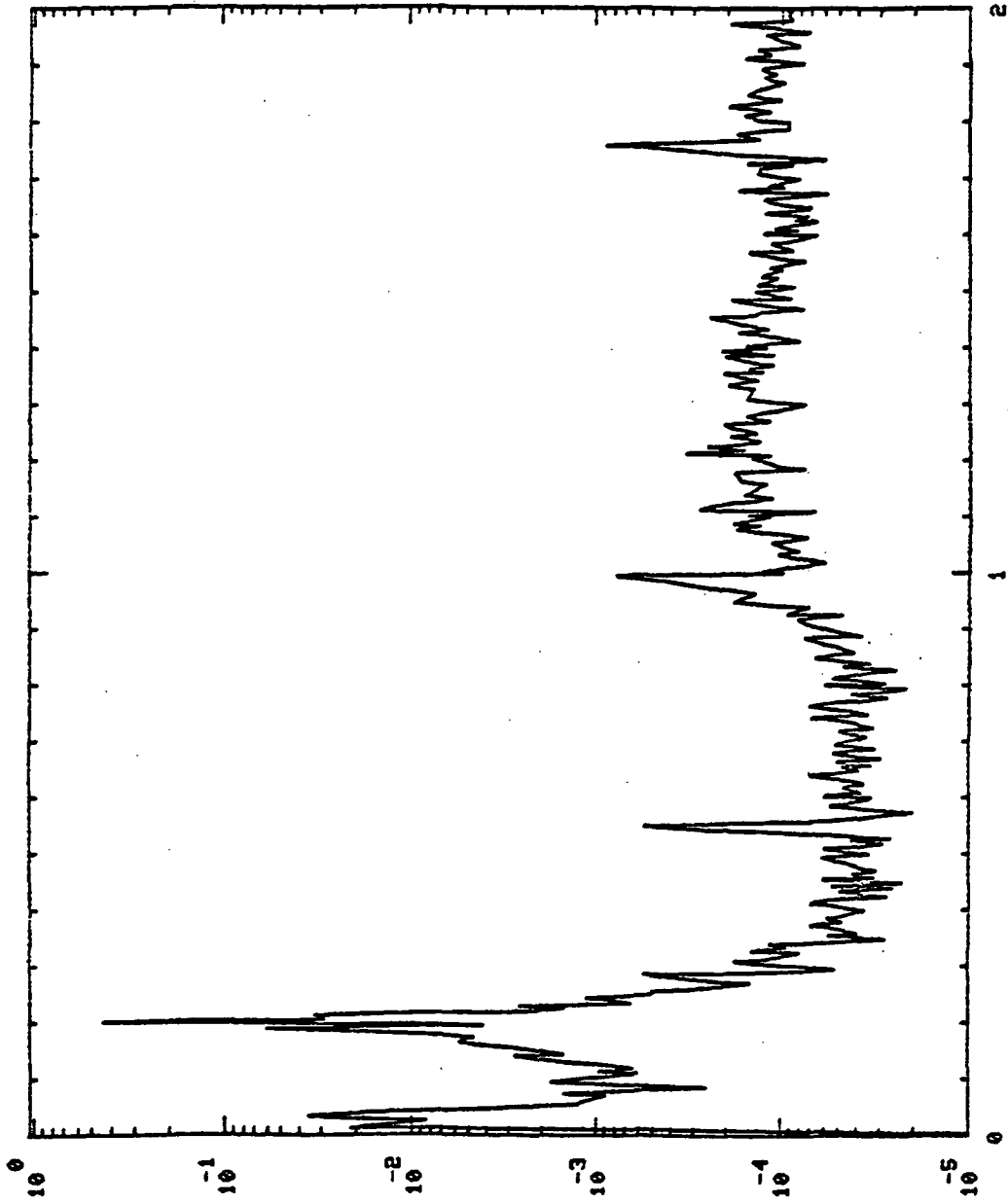


901304 HPOP IN PR S+ 50.01H0,'S



S+ 75.0

901304 HPOP IN PR

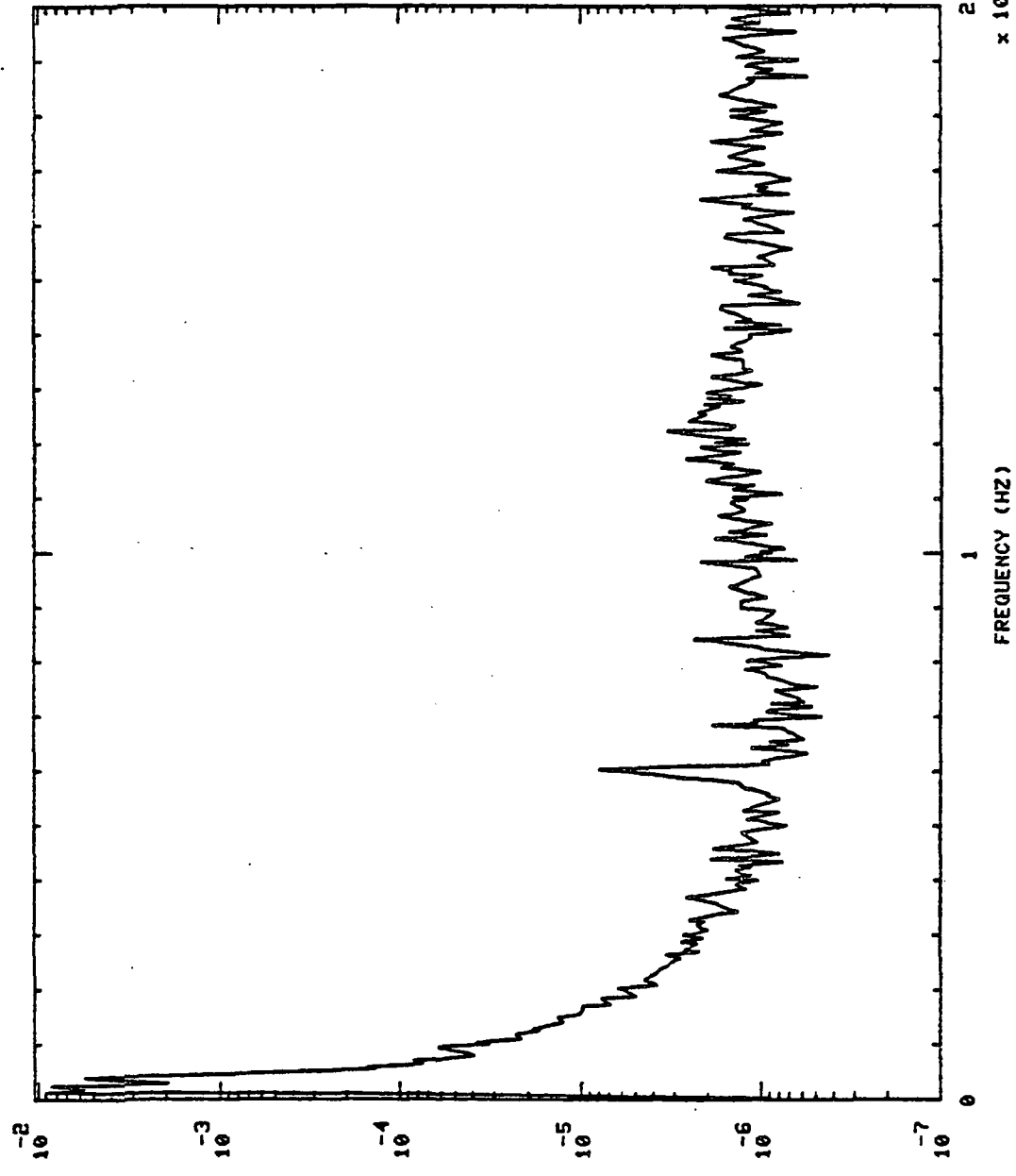


P S D \ H Z

FREQUENCY (HZ)

2.4  
x 10<sup>4</sup>

901304 HI LX I PR S+ 5.01H0,'S



PSD / HZ

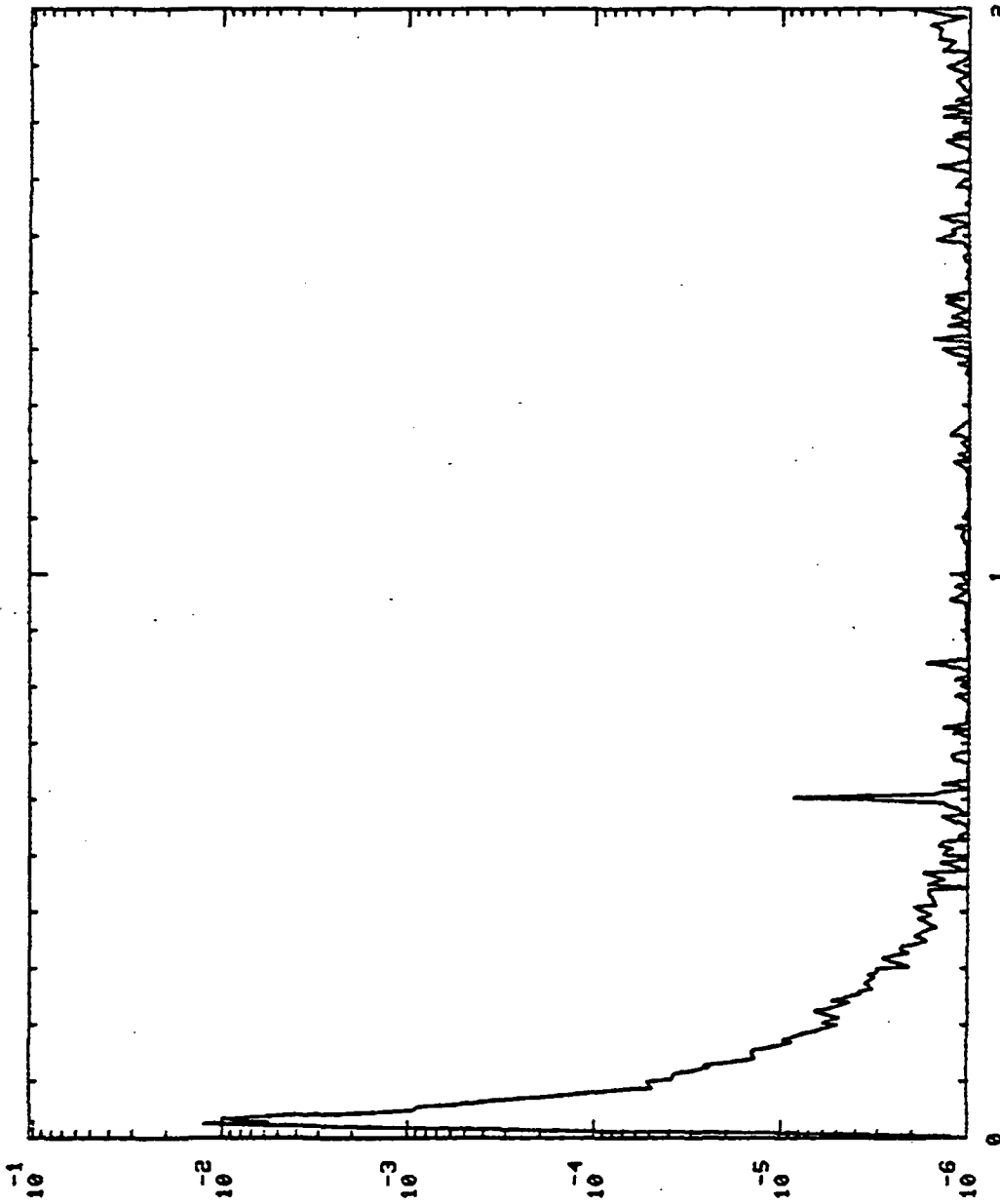
2.4  
 $\times 10^4$

1  
FREQUENCY (HZ)

0



901304 HI LX I PR S+ 50.01H0,'S

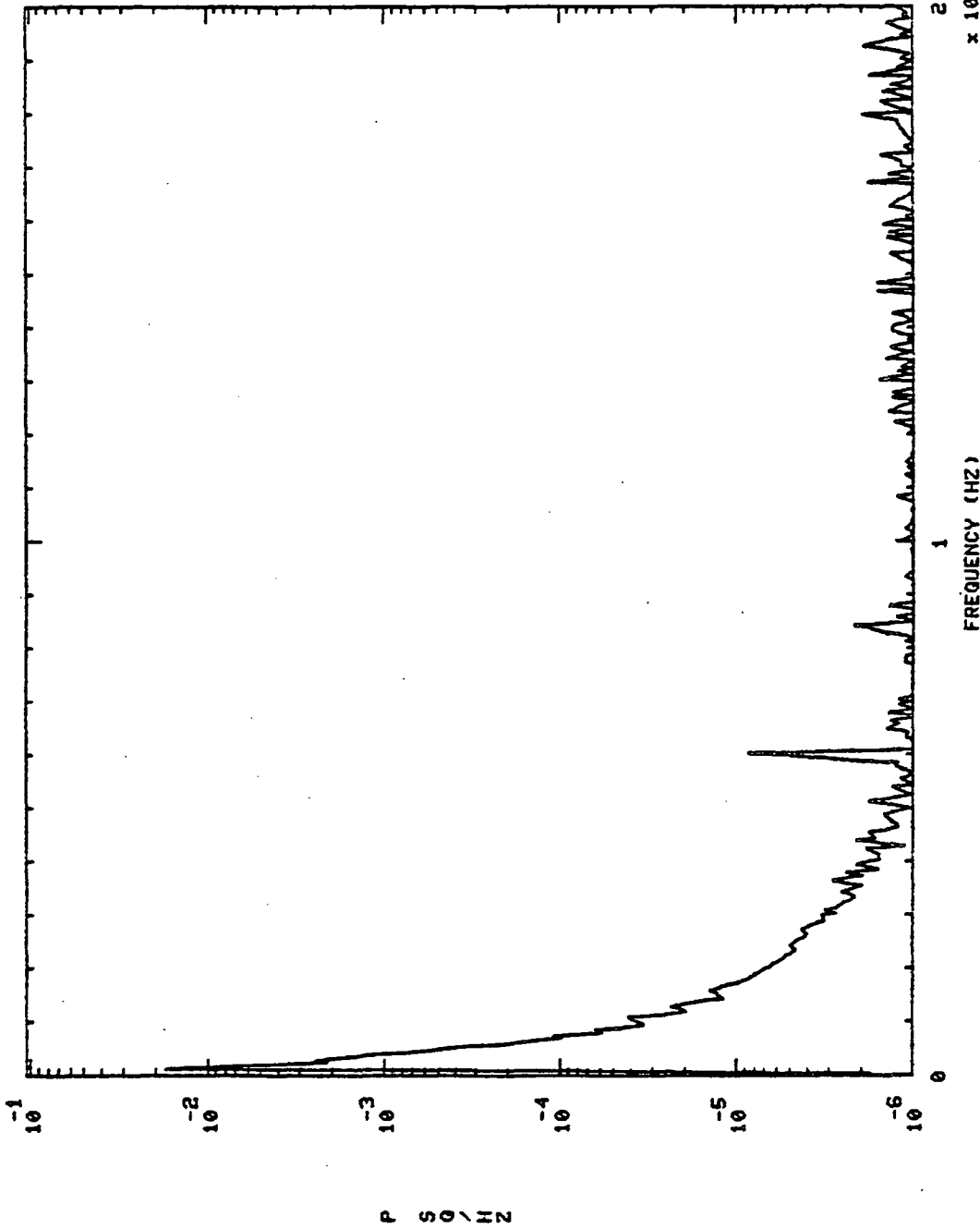


P S D / H Z

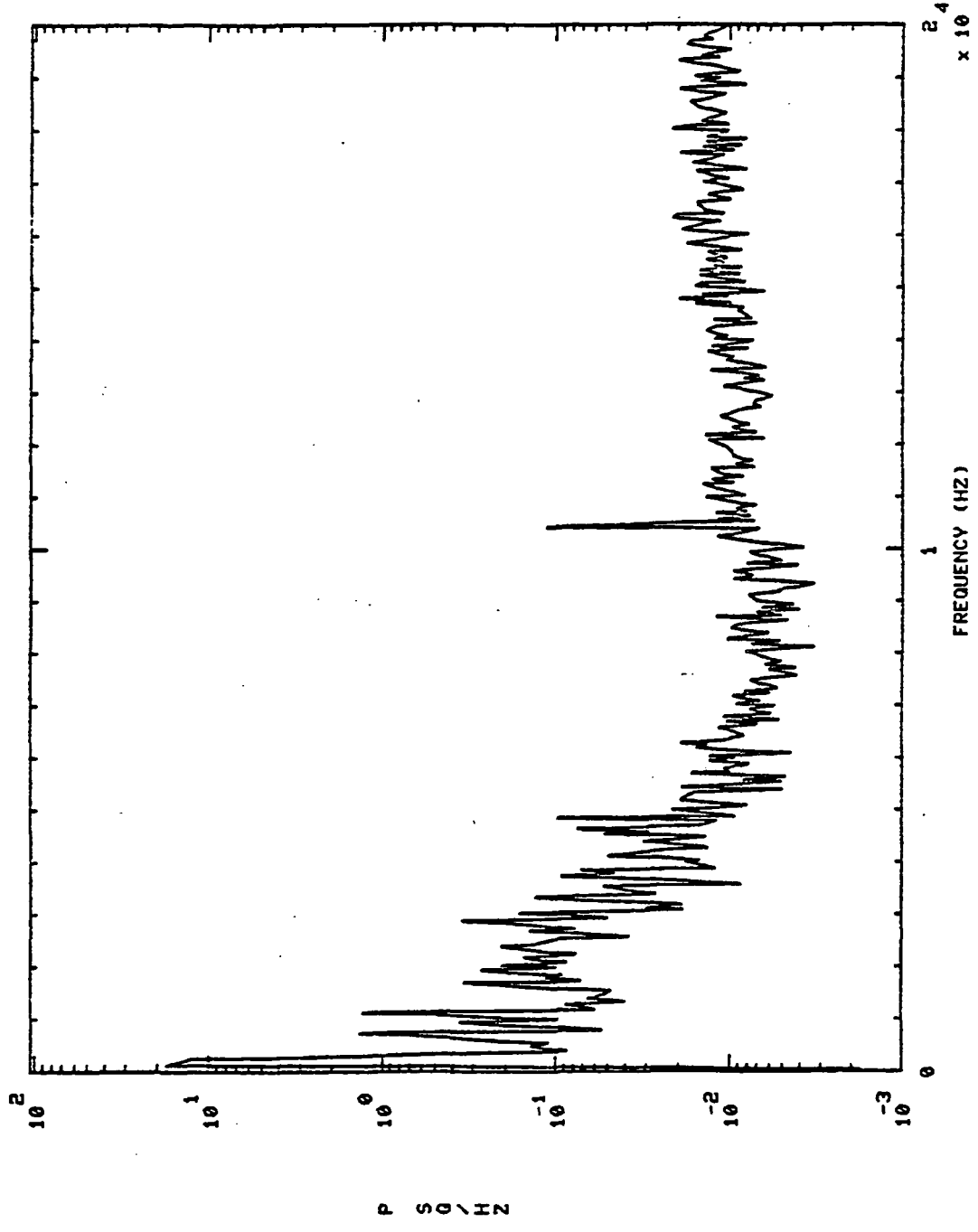
FREQUENCY (HZ)

$\times 10^4$

901304 HI LX I PR S+ 75.0110,'S

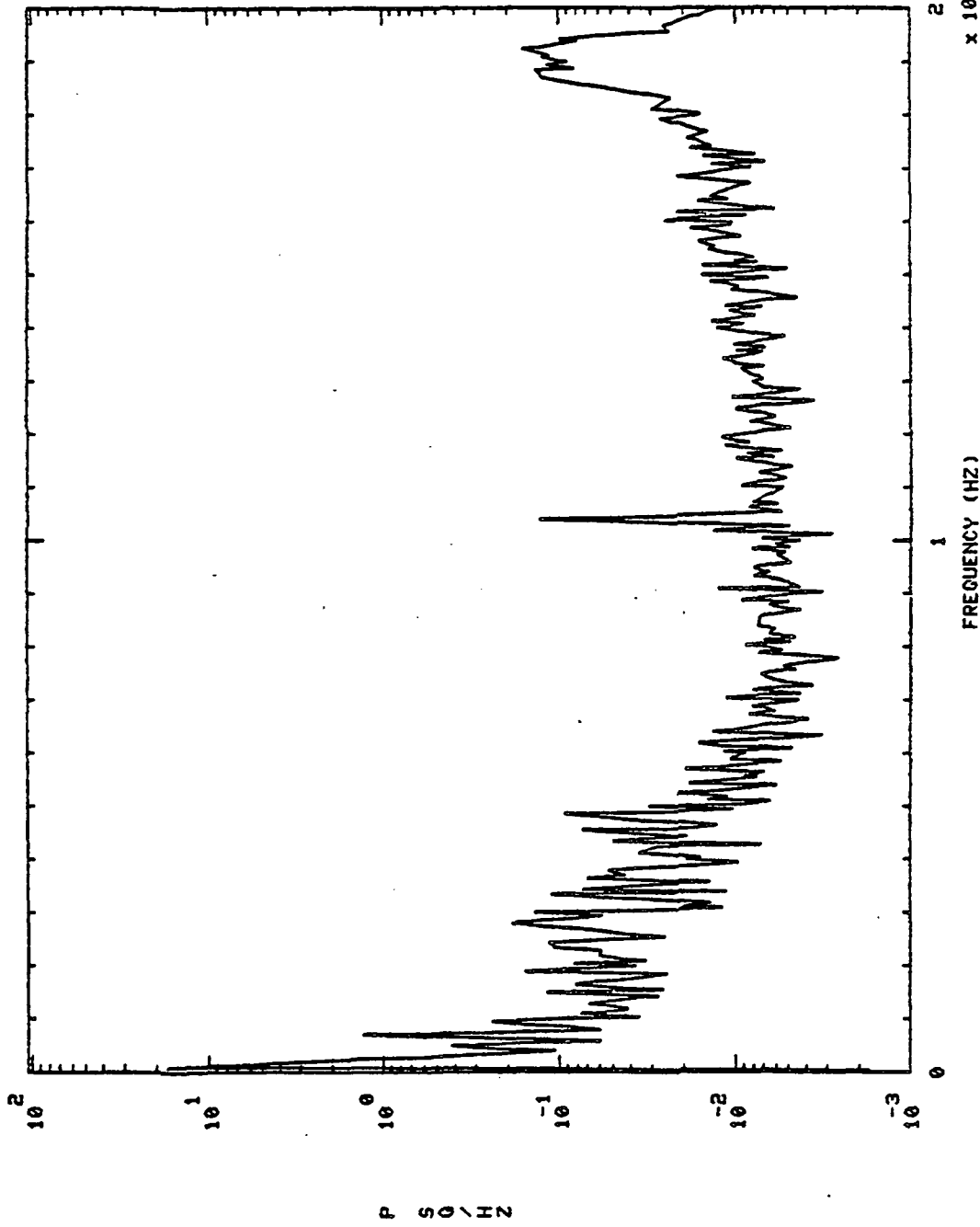


901305 HPOP DS PR S+ 5.01H0,'S

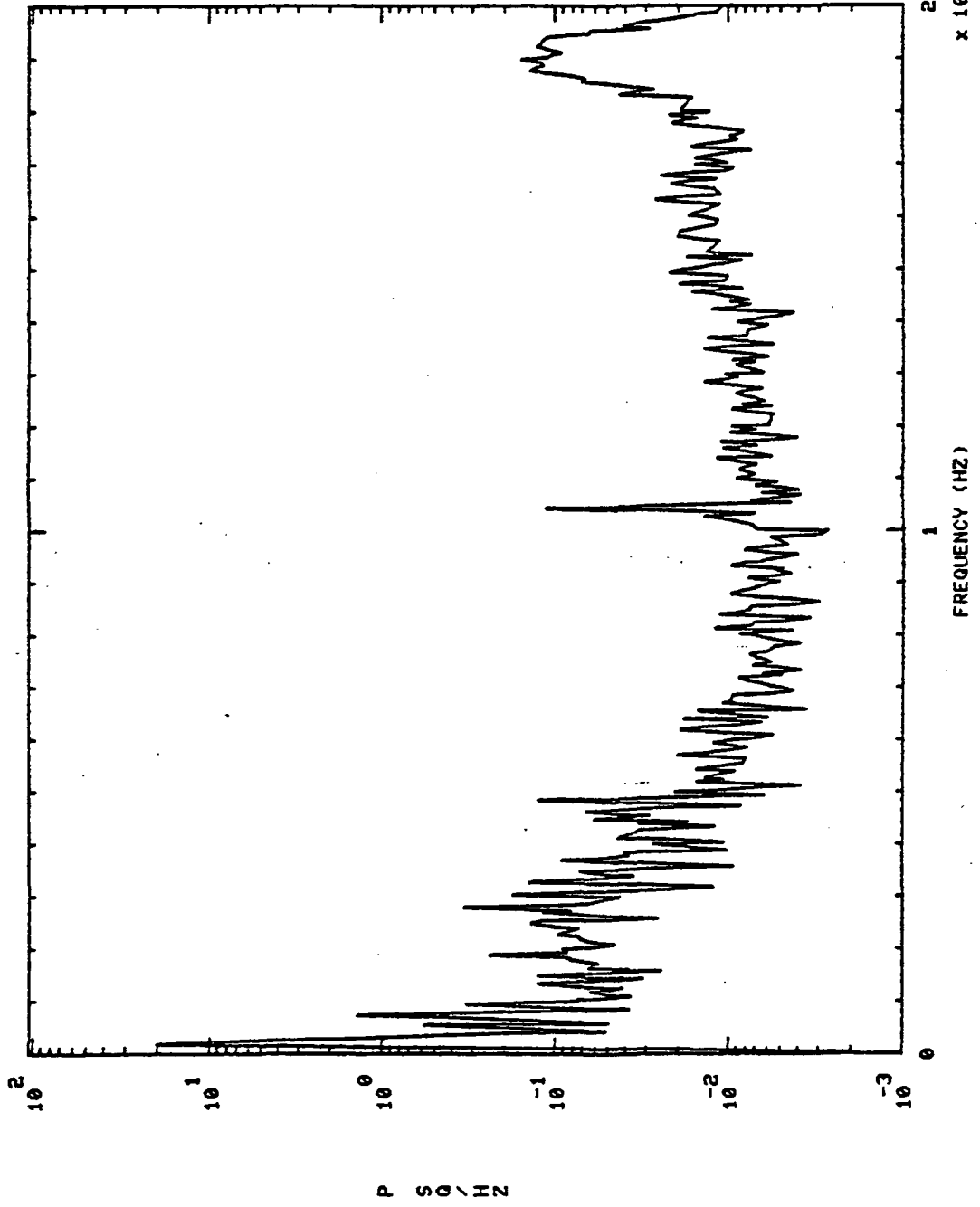


S+ 25.01H0,'S

901305 HPOP DS PR



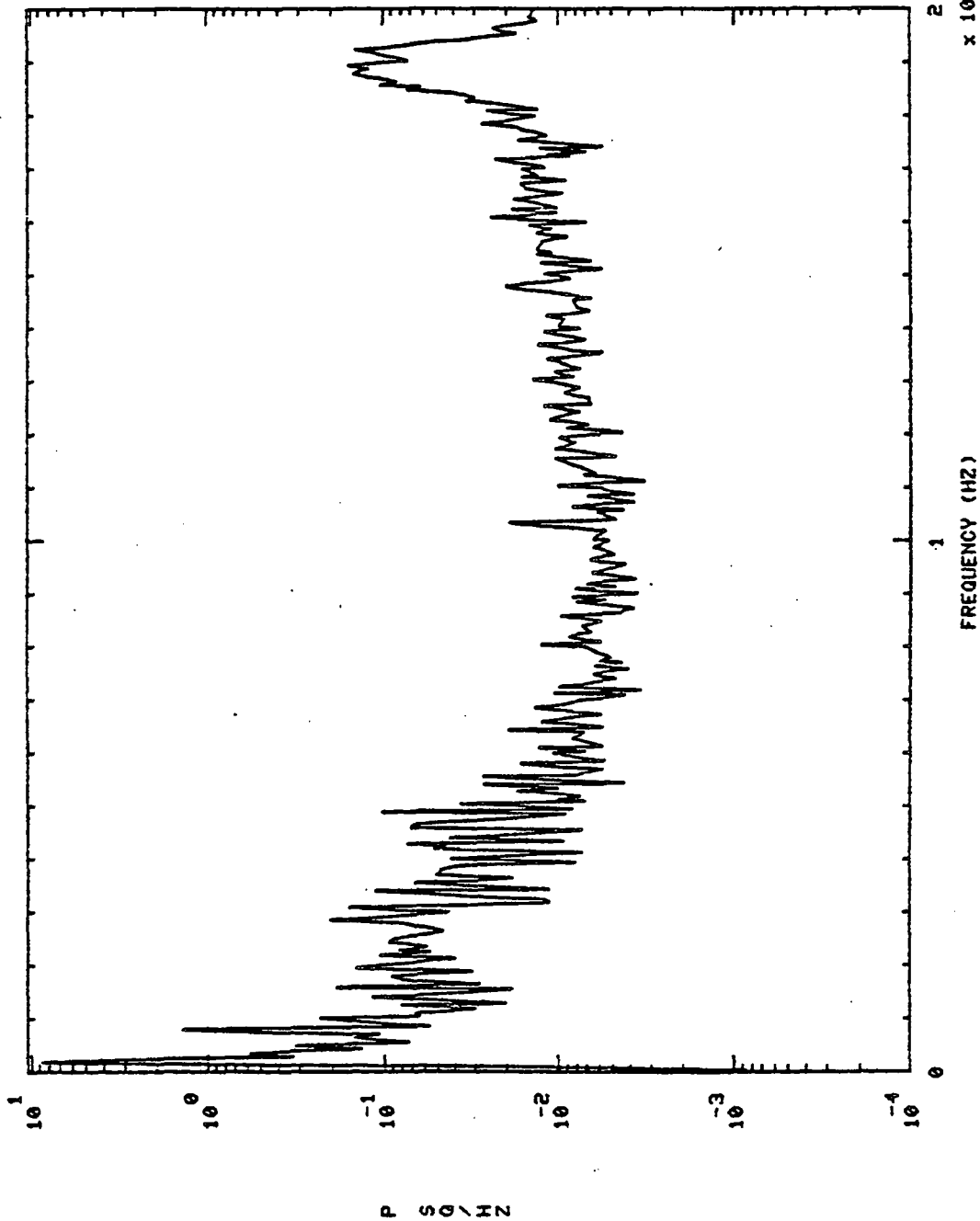
901305 HPOP DS PR S+ 50.01H0,'S



S+ 75.01H0,'S

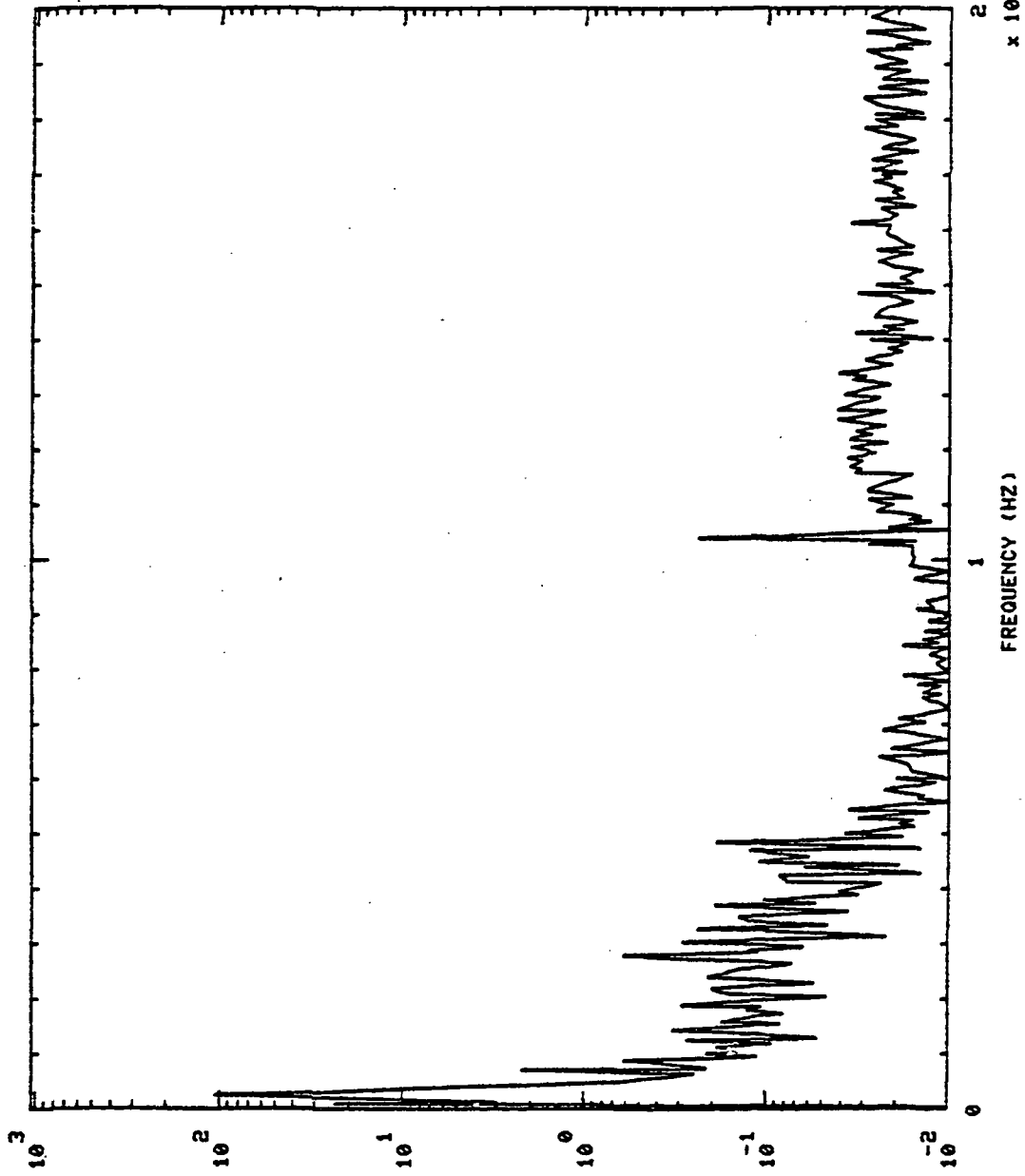
HPOP DS PR

901305



S+ 5.01H0,'S

901305 PBP DS PR



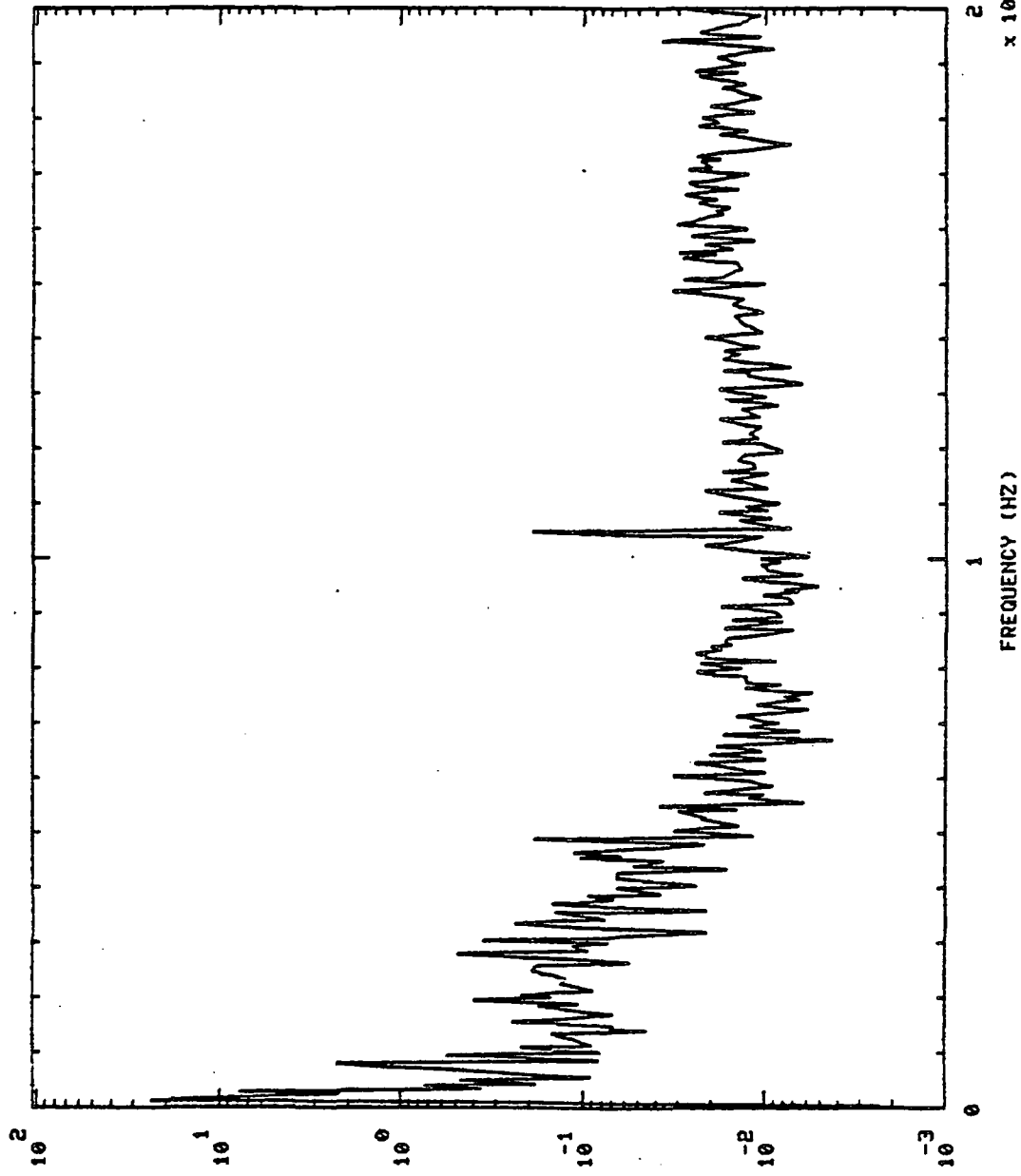
P S D \ HZ

FREQUENCY (HZ)

x 10^4

S+ 25.01H0,'S

S01305 PBP DS PR



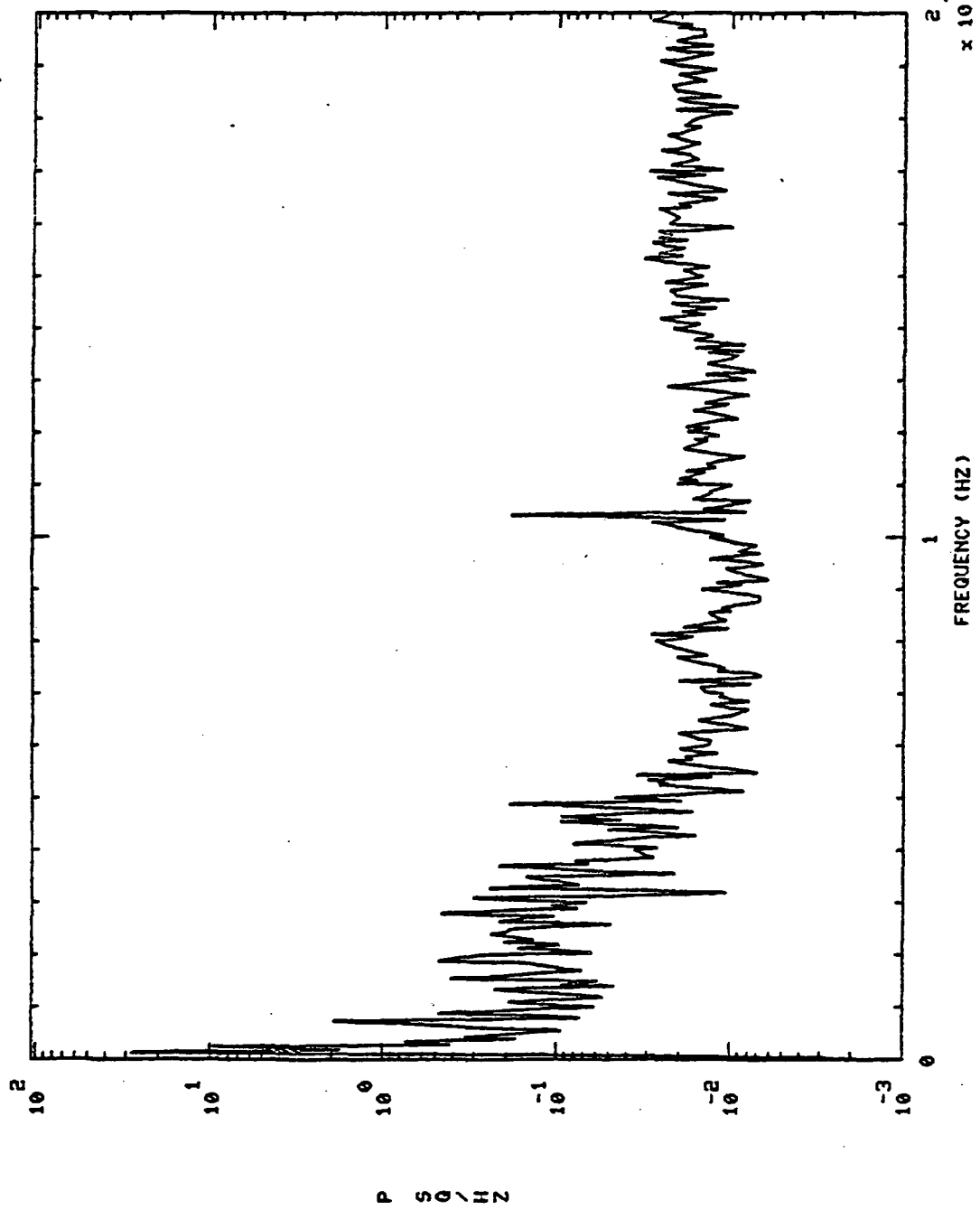
P S D / H Z

FREQUENCY (HZ)

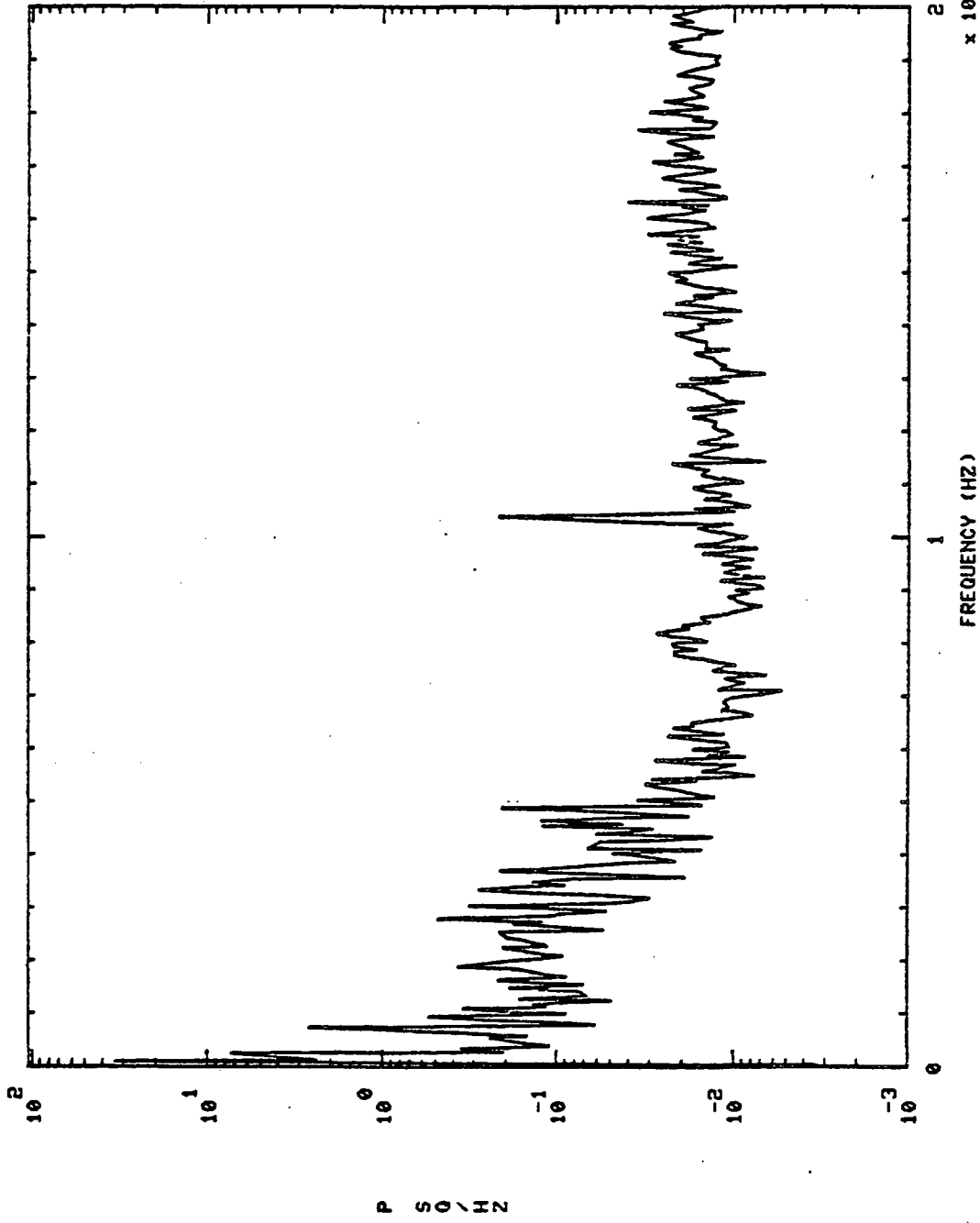
$\times 10^4$



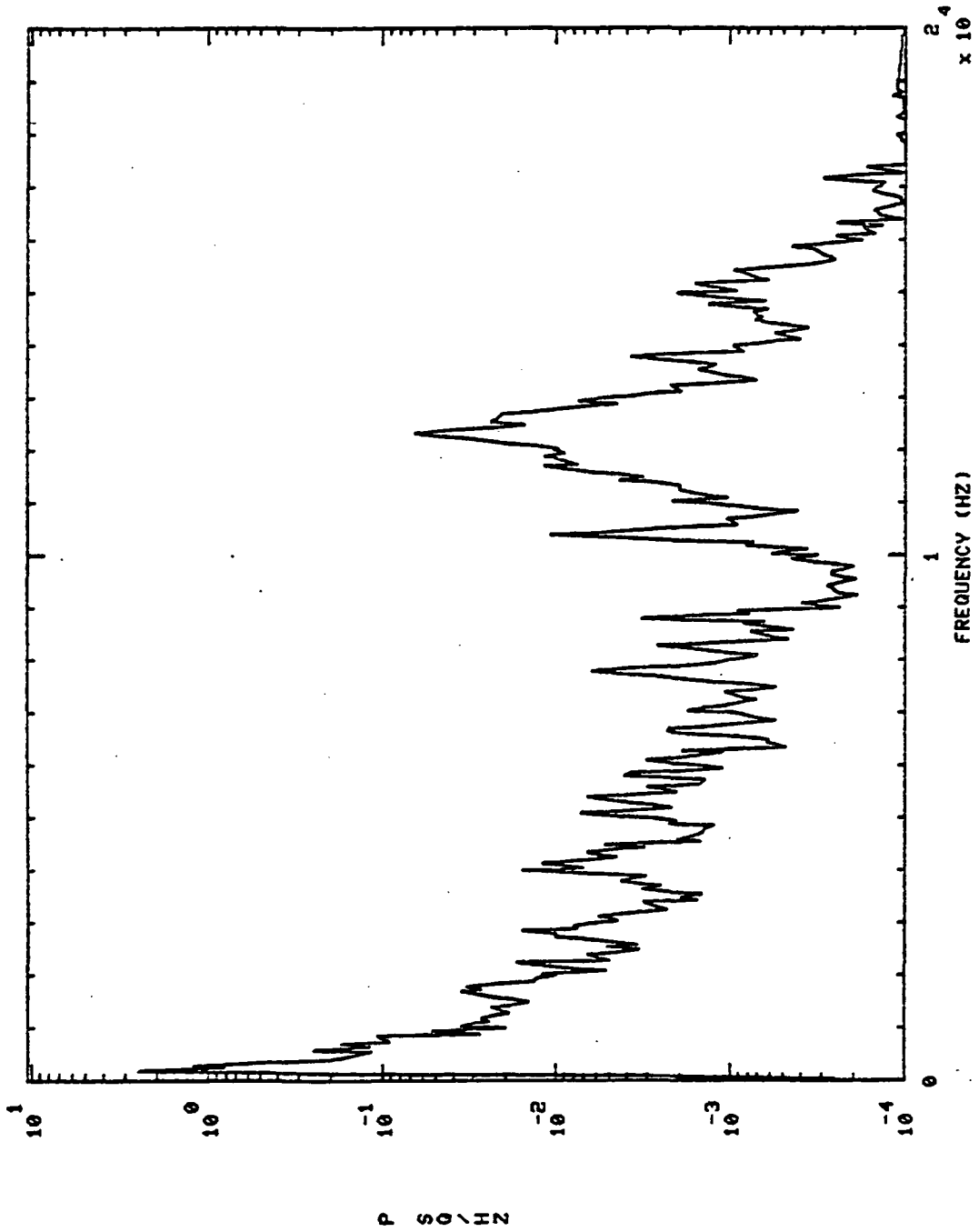
901305 PBP DS PR S+ 50.01H0,'S



901305 PBP DS PR S+ 75.01H0,'S



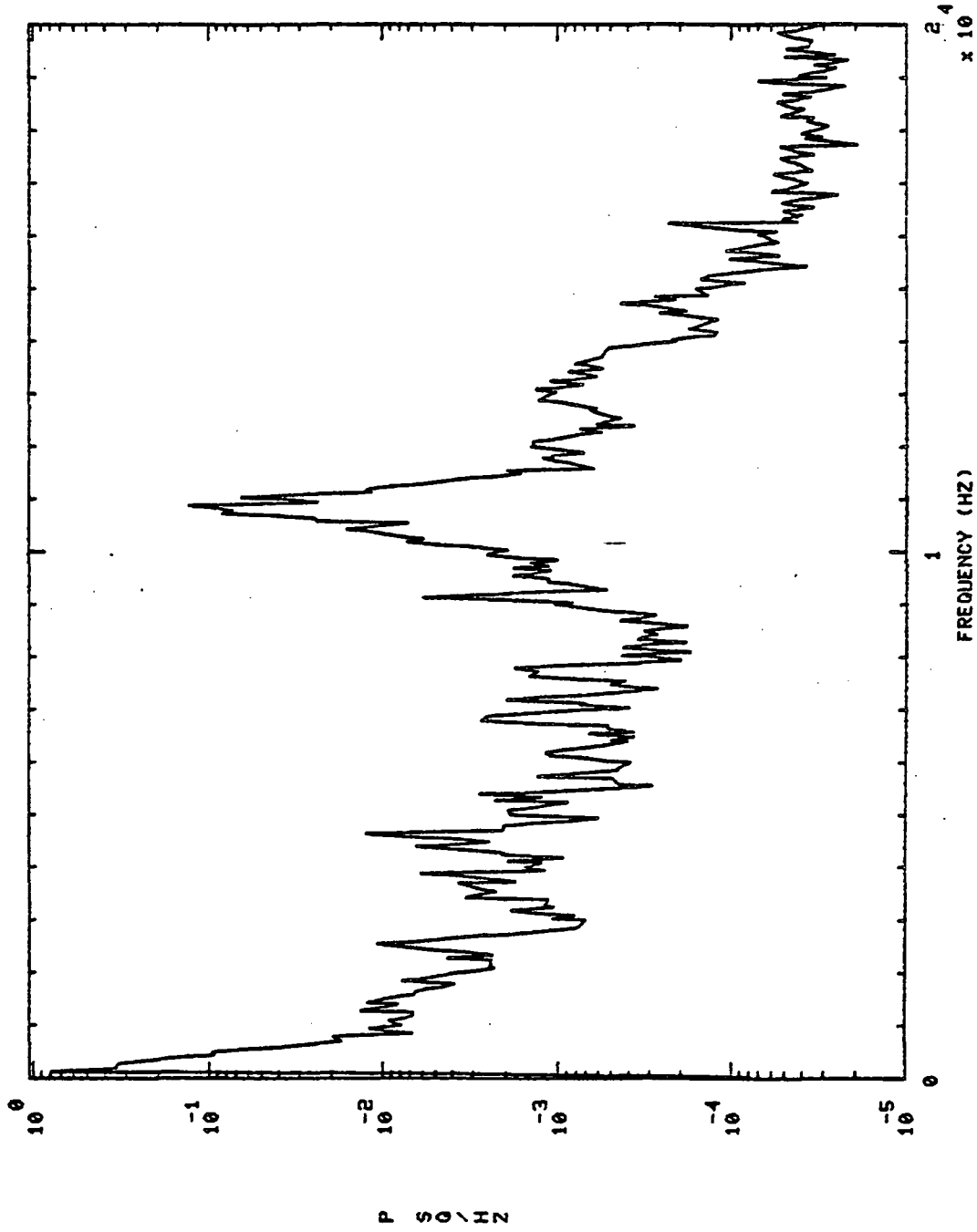
901305 FPB FUEL MAN PR S+ 5.01H0,'S



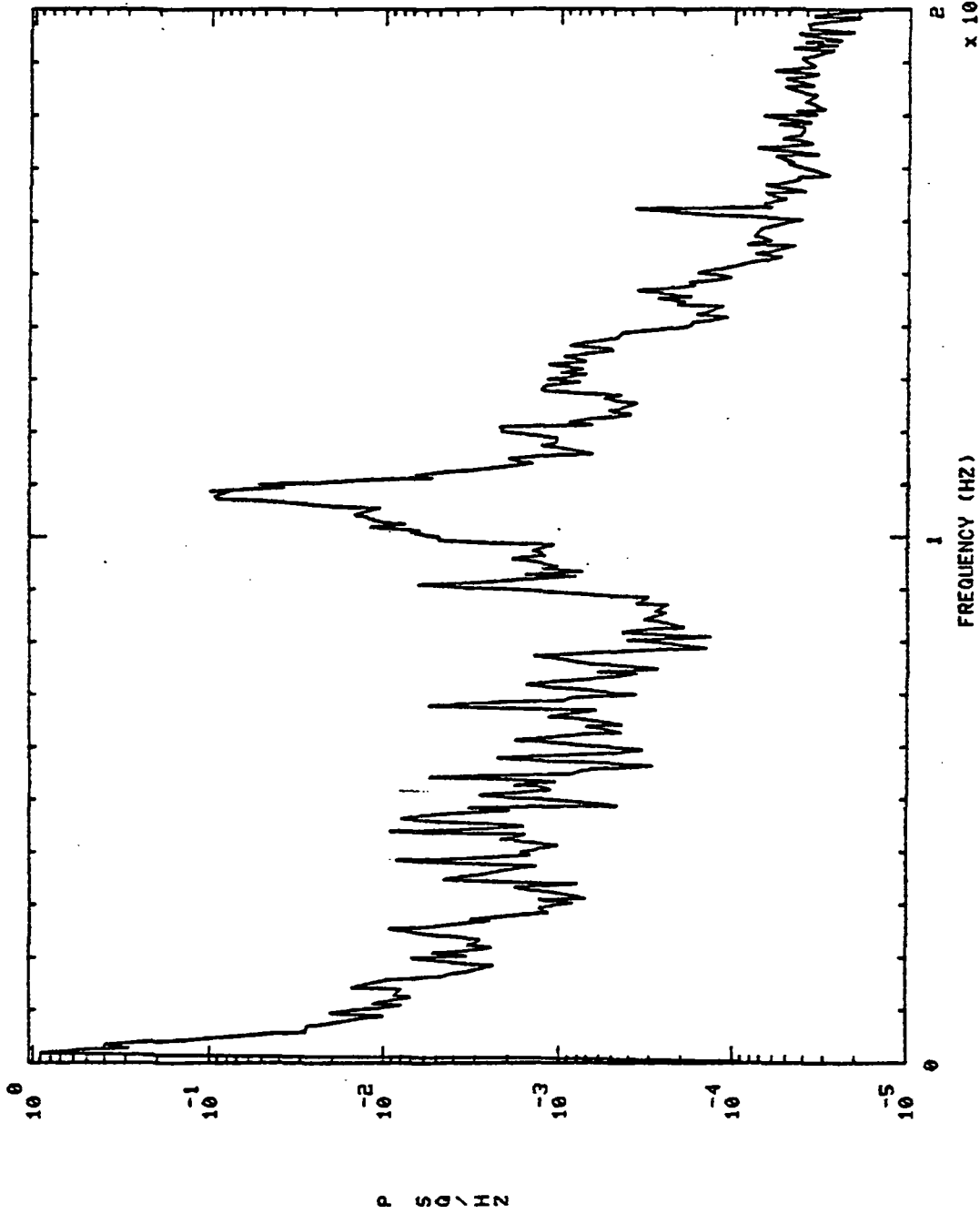
901305

FPB FUEL MAN PR

S+ 25.01H0,'S



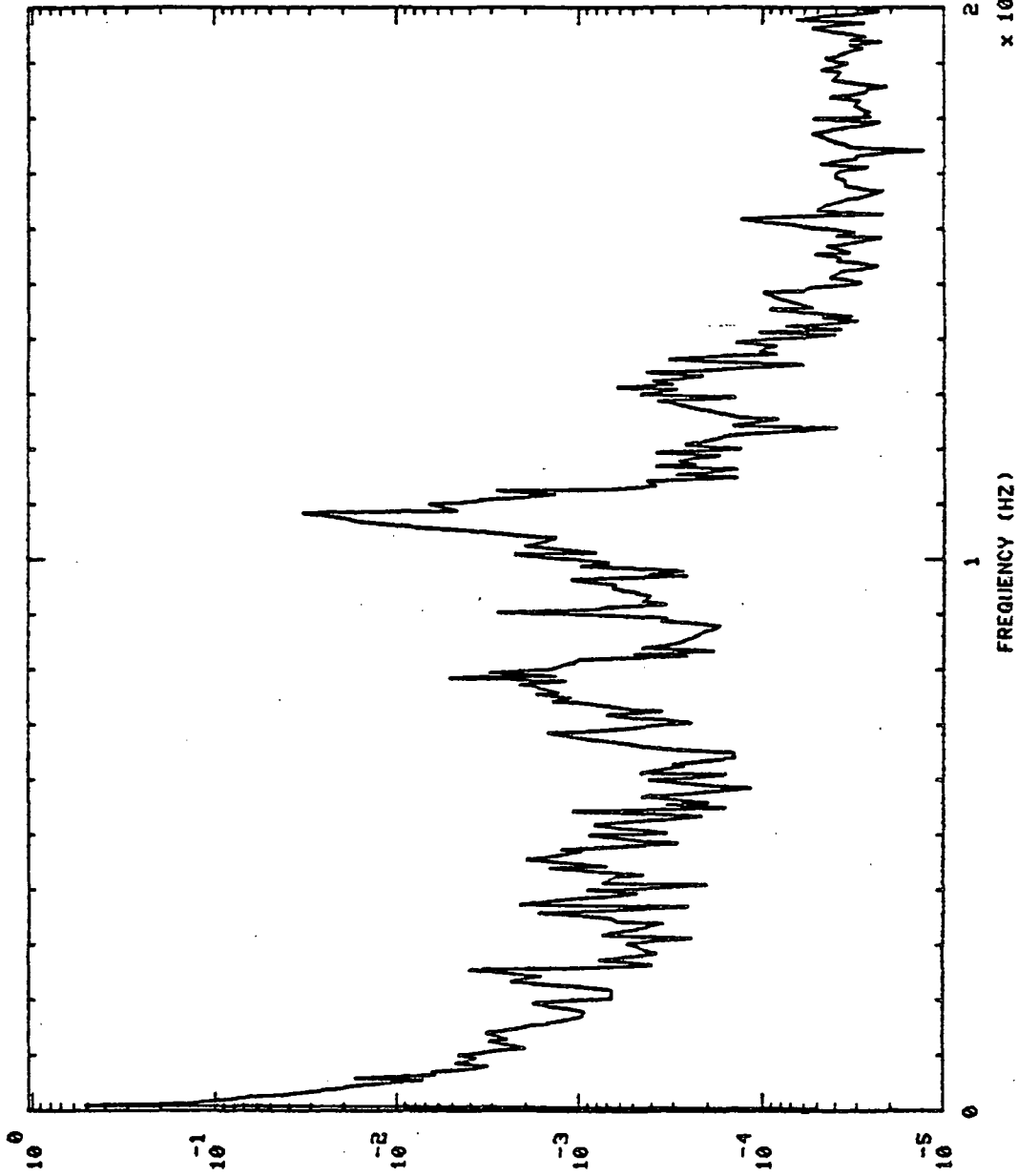
901305 FPB FUEL MAN PR S+ 50.01H0,'S



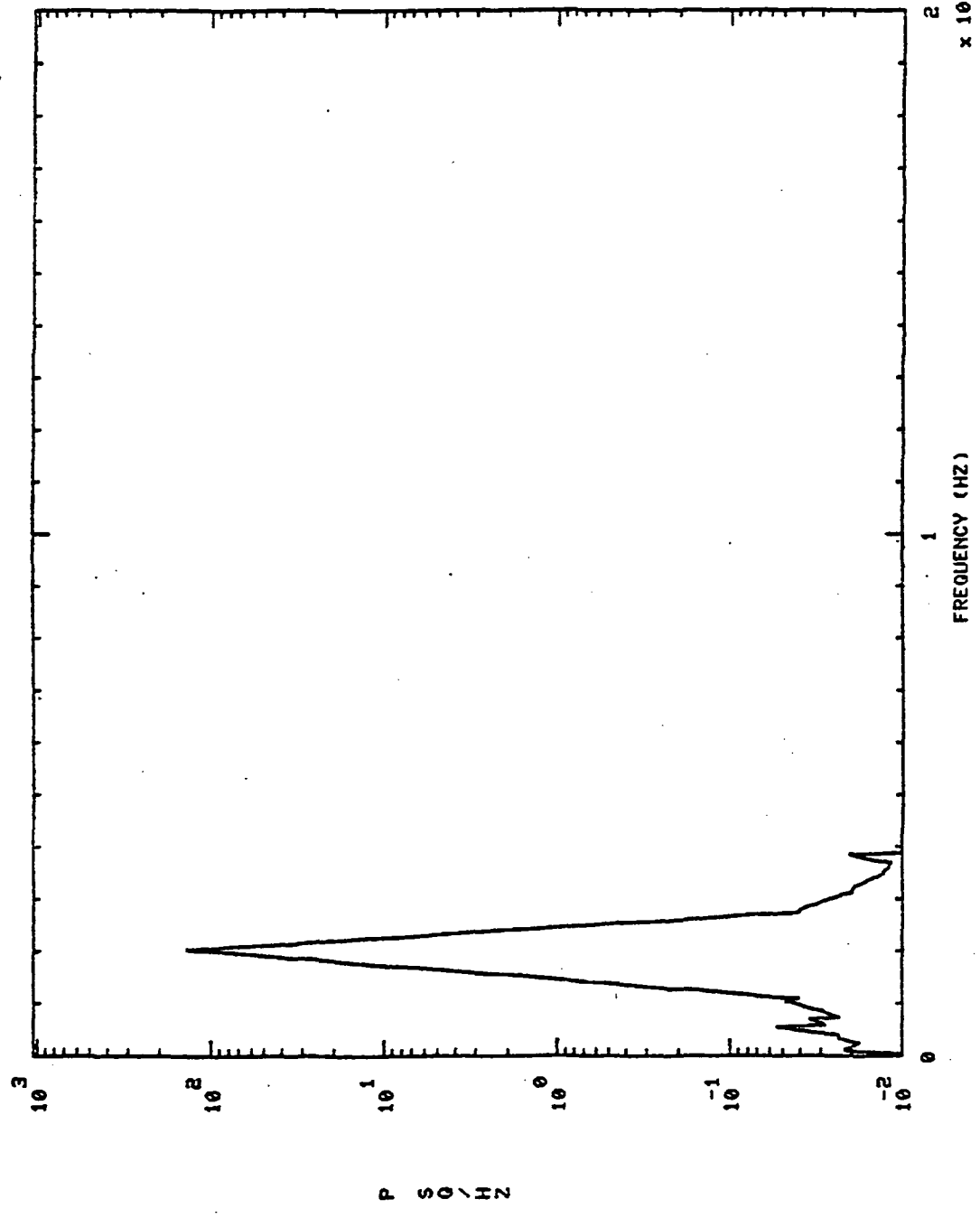
901305

FPB FUEL MAN PR

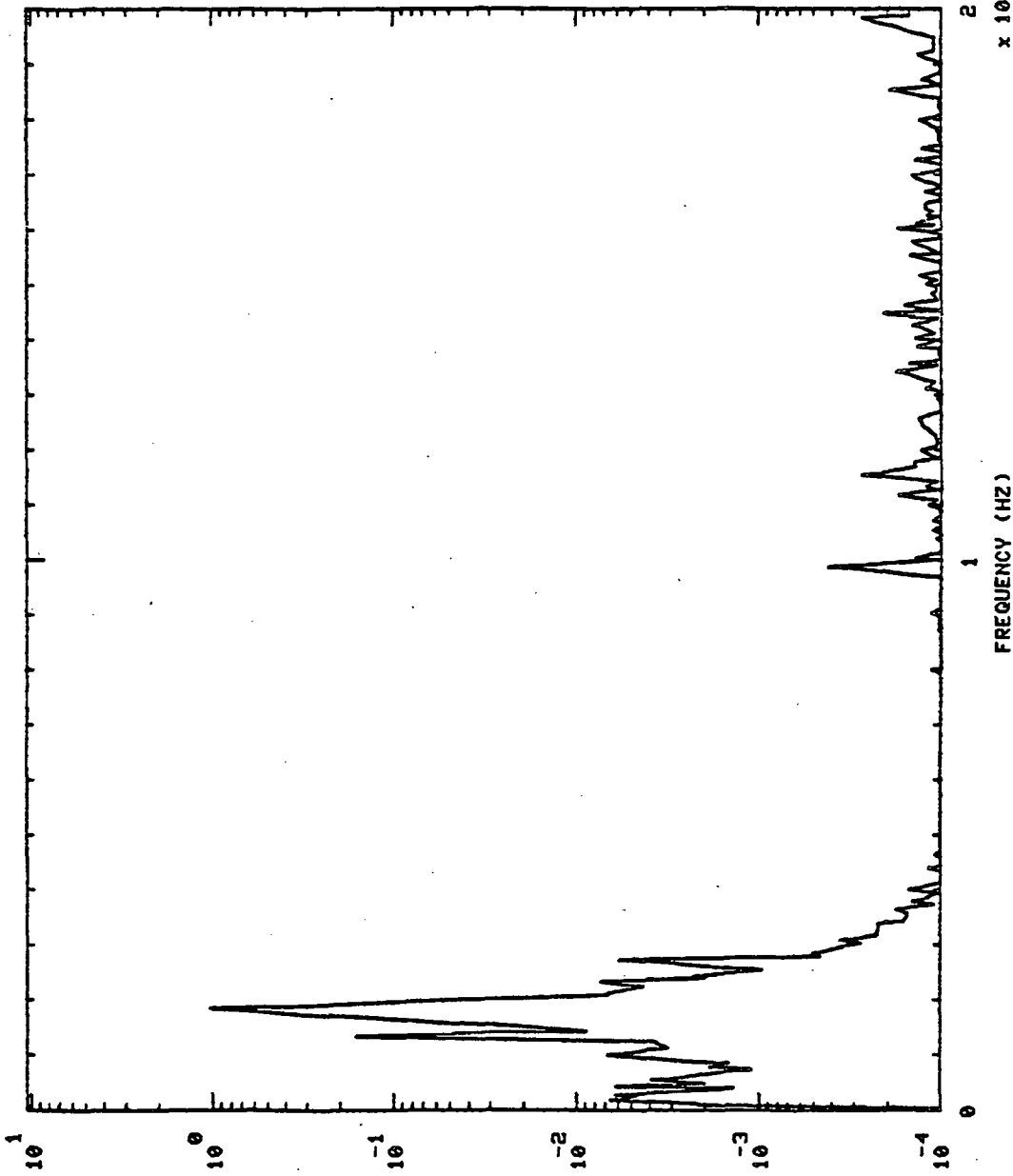
S+ 75.0110,'S



901305 HPOP IN PR S+ 5.01H0,'S



901305 HPOP IN PR S+ 25.01H0,'S

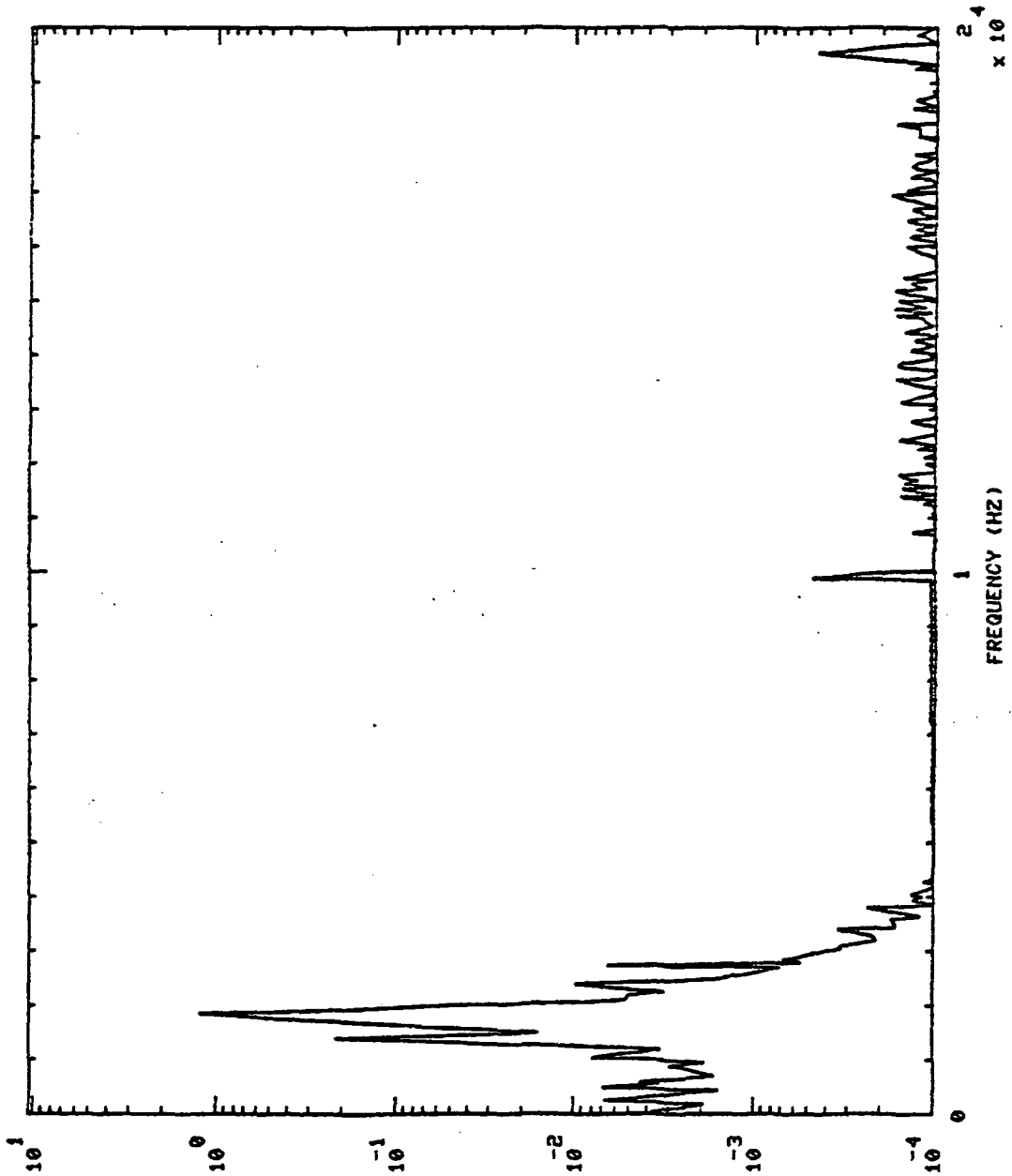


P 50/22



901305 HPOP IN PR S+ 50.01H0,'S

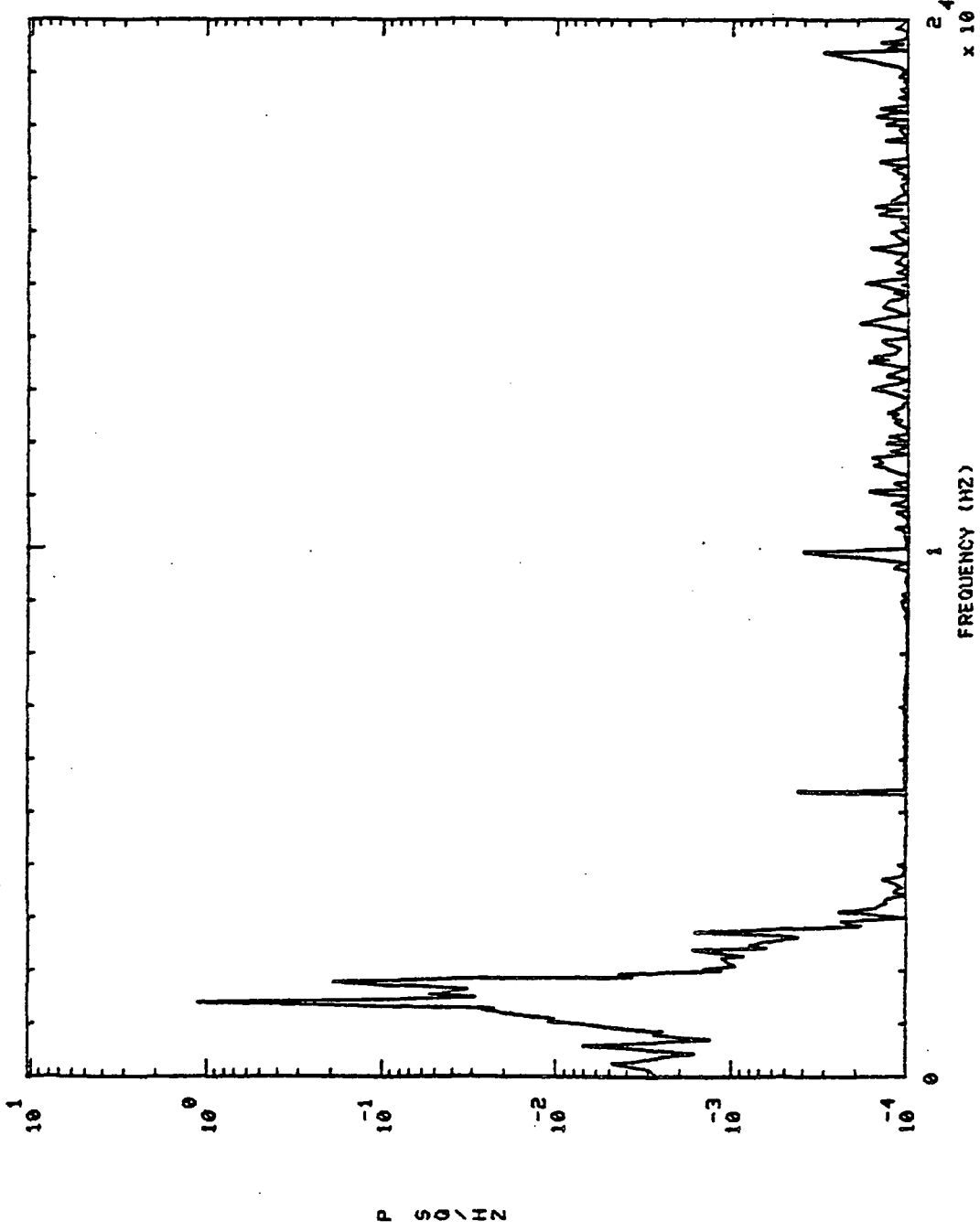
901305 HPOP IN PR



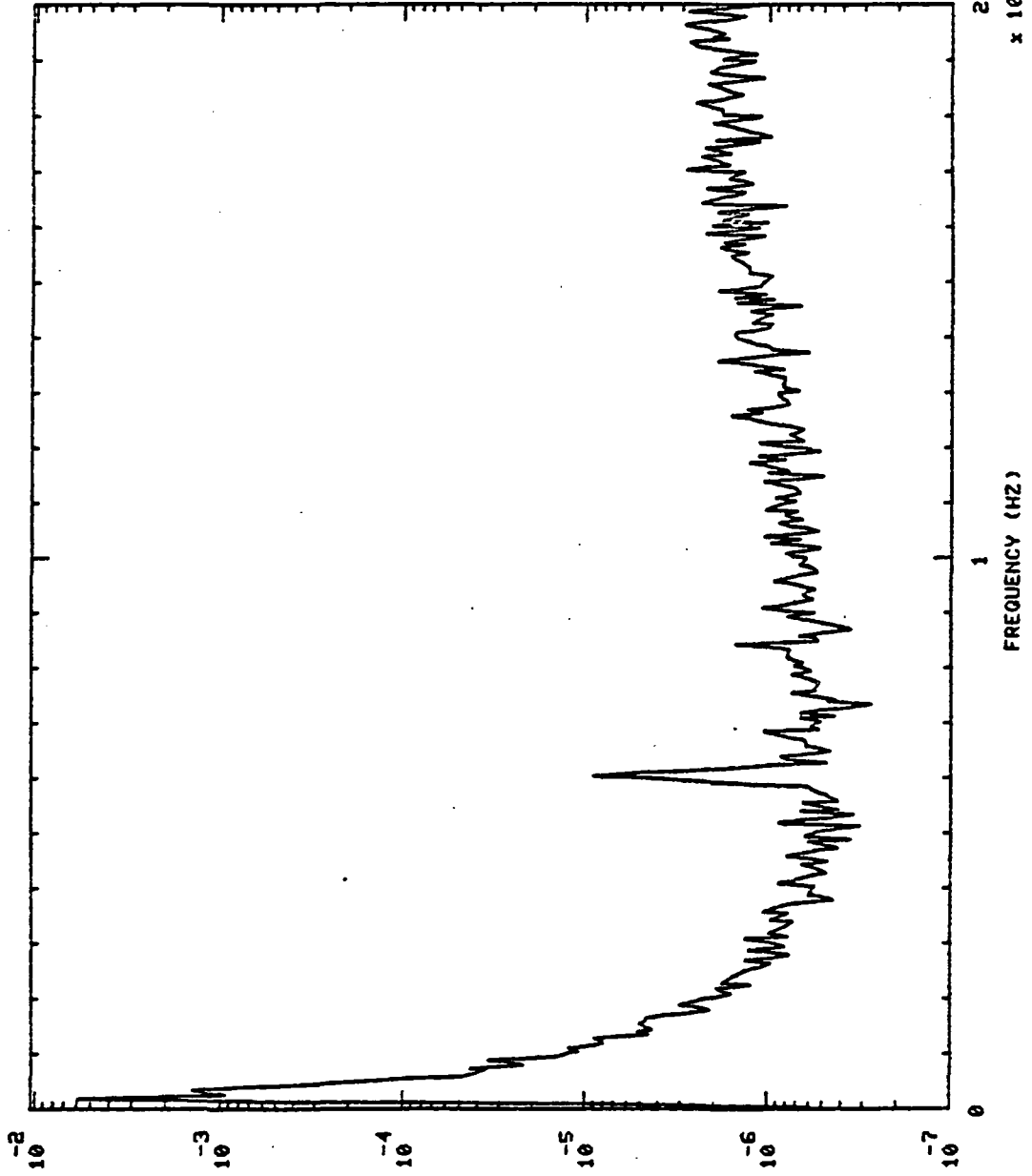
P 50 / HZ

St 75.0110, 'S

901305 HPOP IN PR

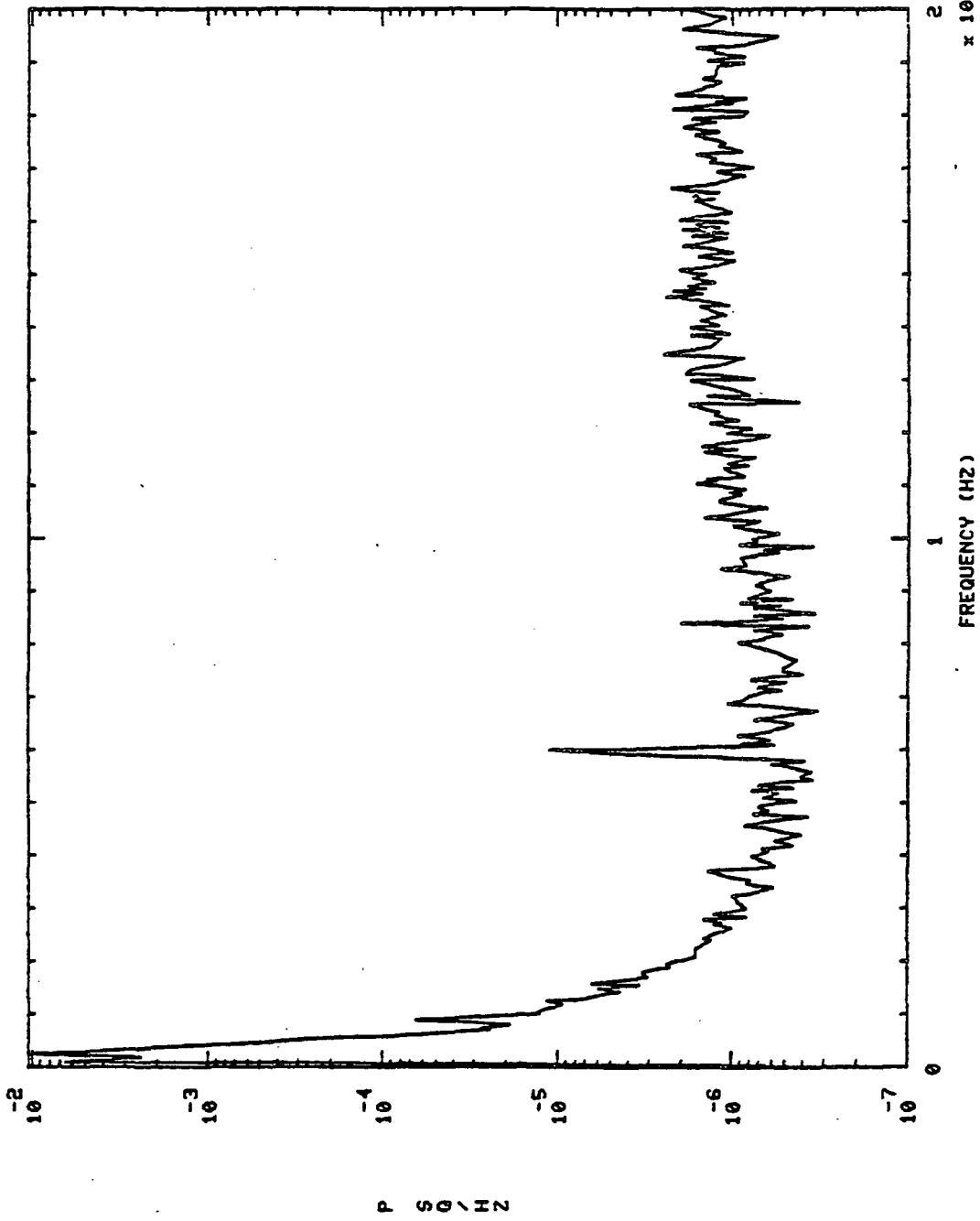


901305 HI LX I PR S+ 5.01H0.'S



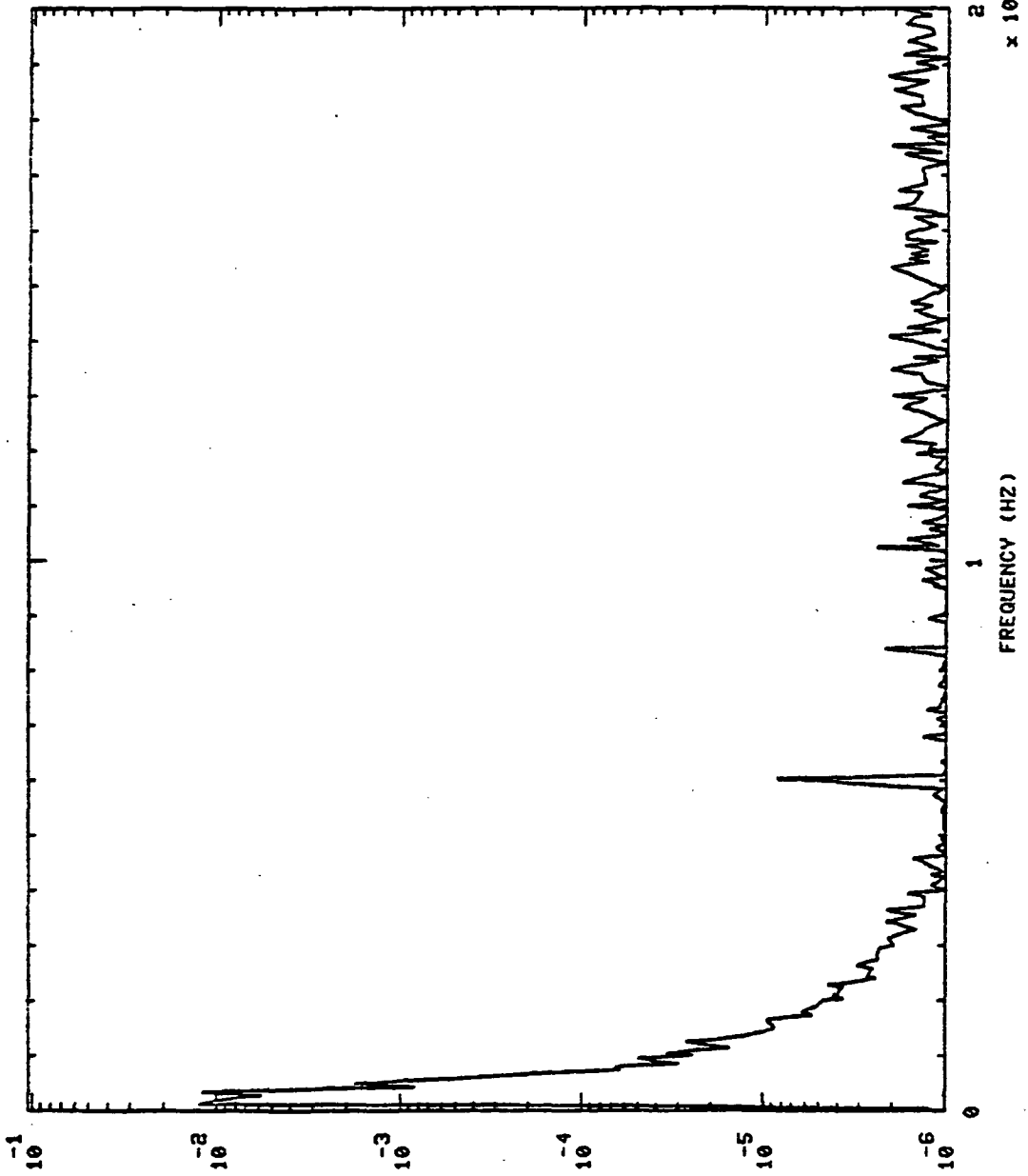
P S D \ H Z

901305 HI LX I PR S+ 25.01H0.'S



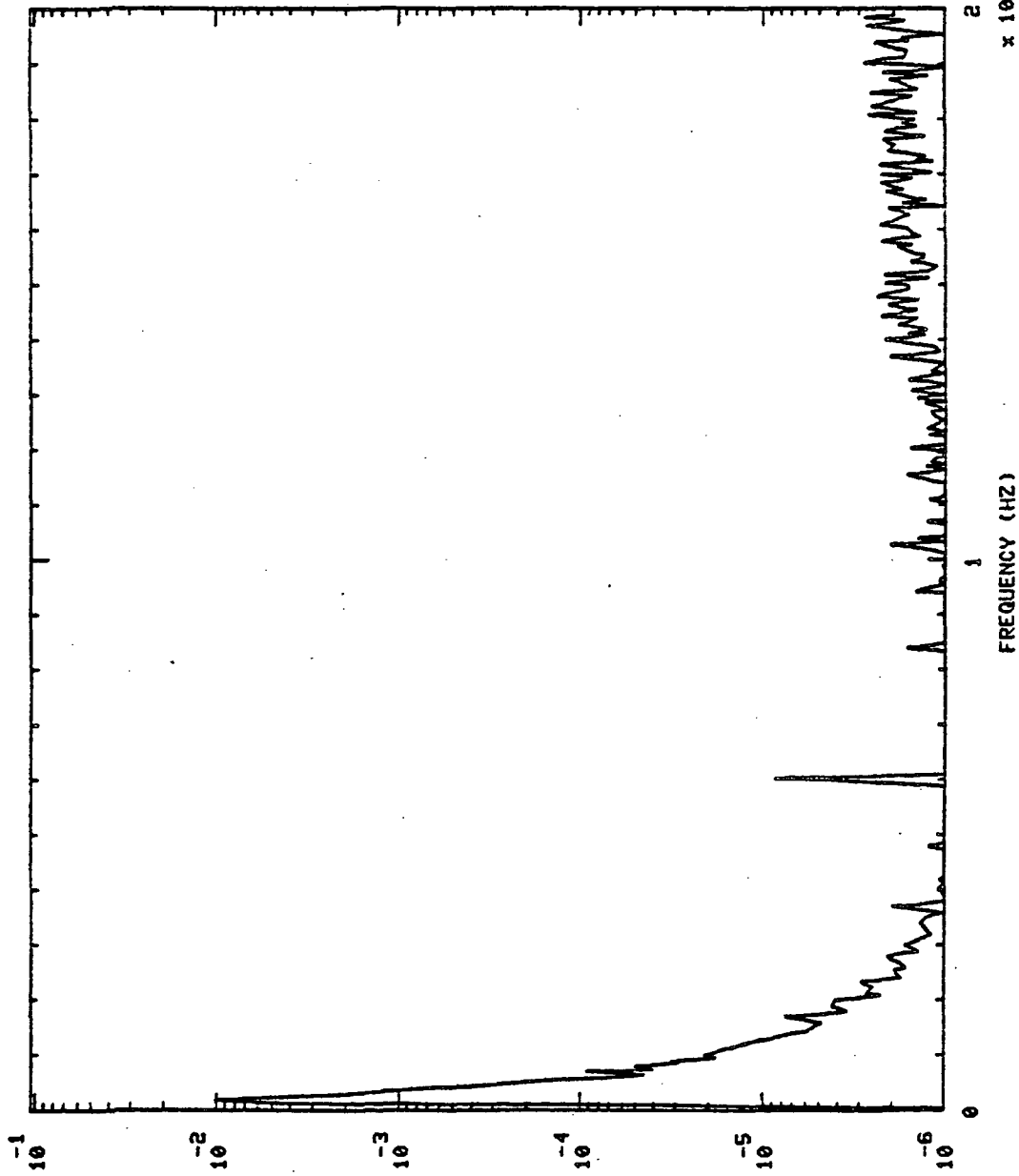
S+ 50.01H0,'S

901305 HI LX I PR



P S D \ H Z

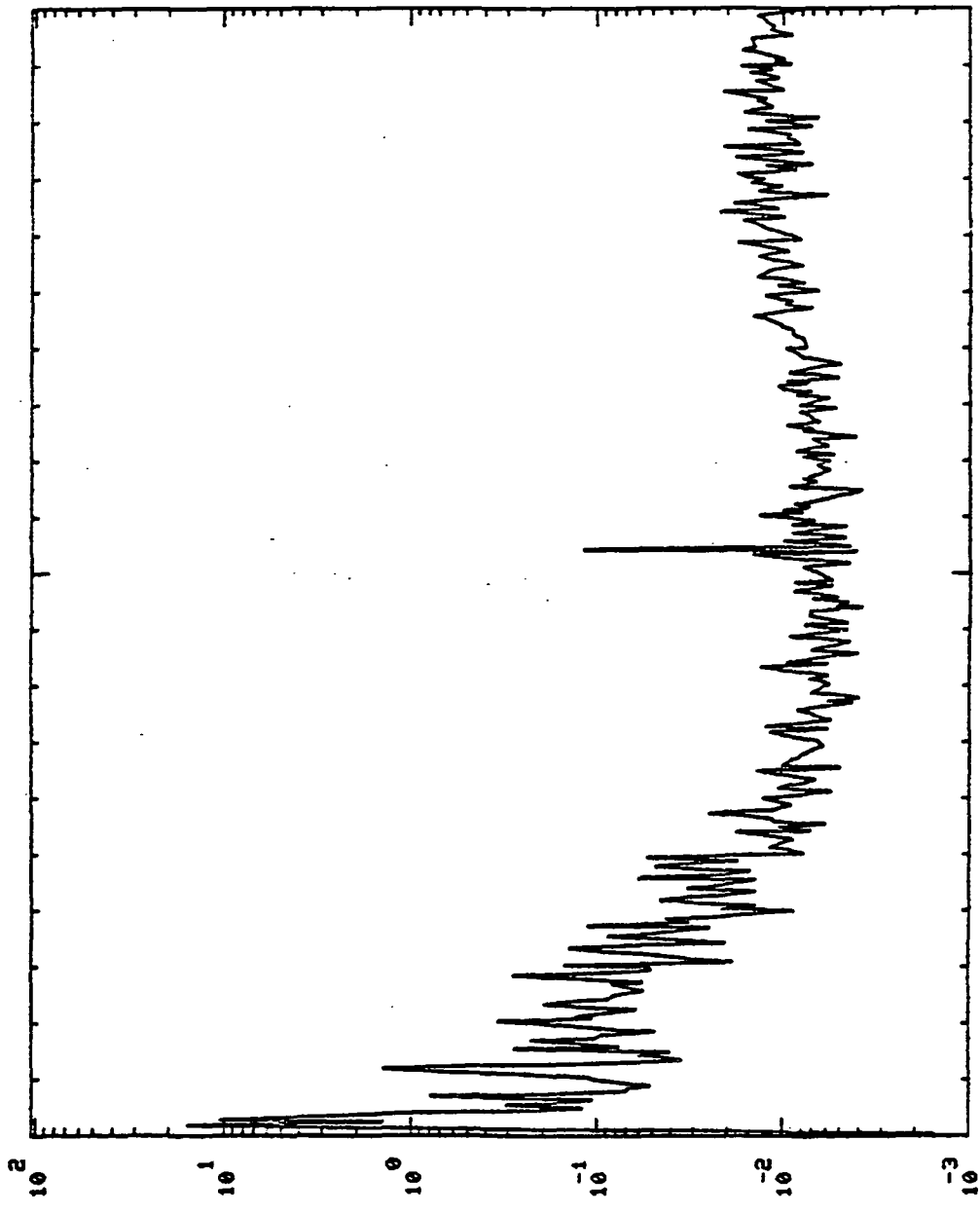
901305 HI LX I PR S+ 75.01H0,'S



P S D

S+ 5.01H0,'S

901306 HPOP DS PR

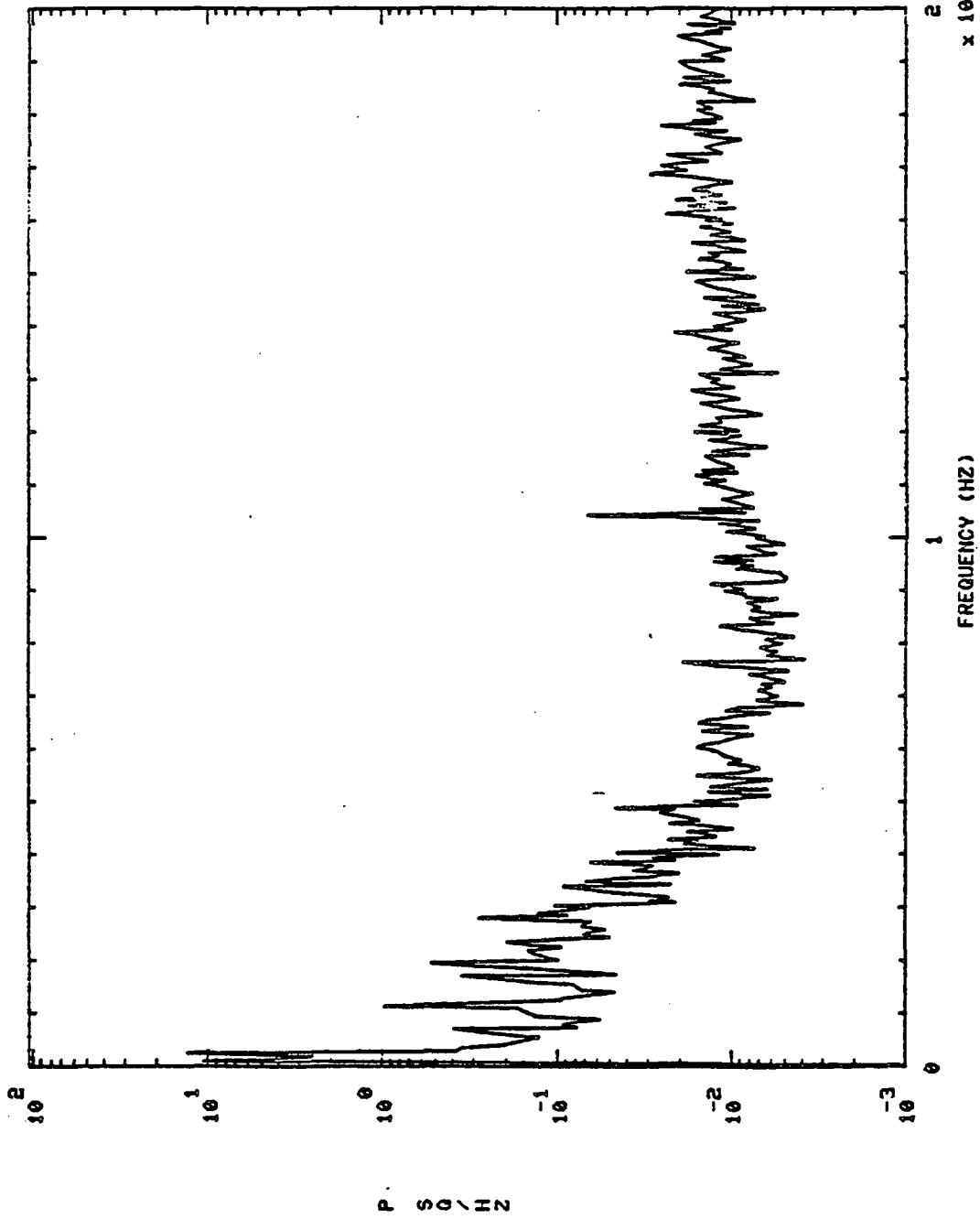


$2.4 \times 10^4$

FREQUENCY (HZ)

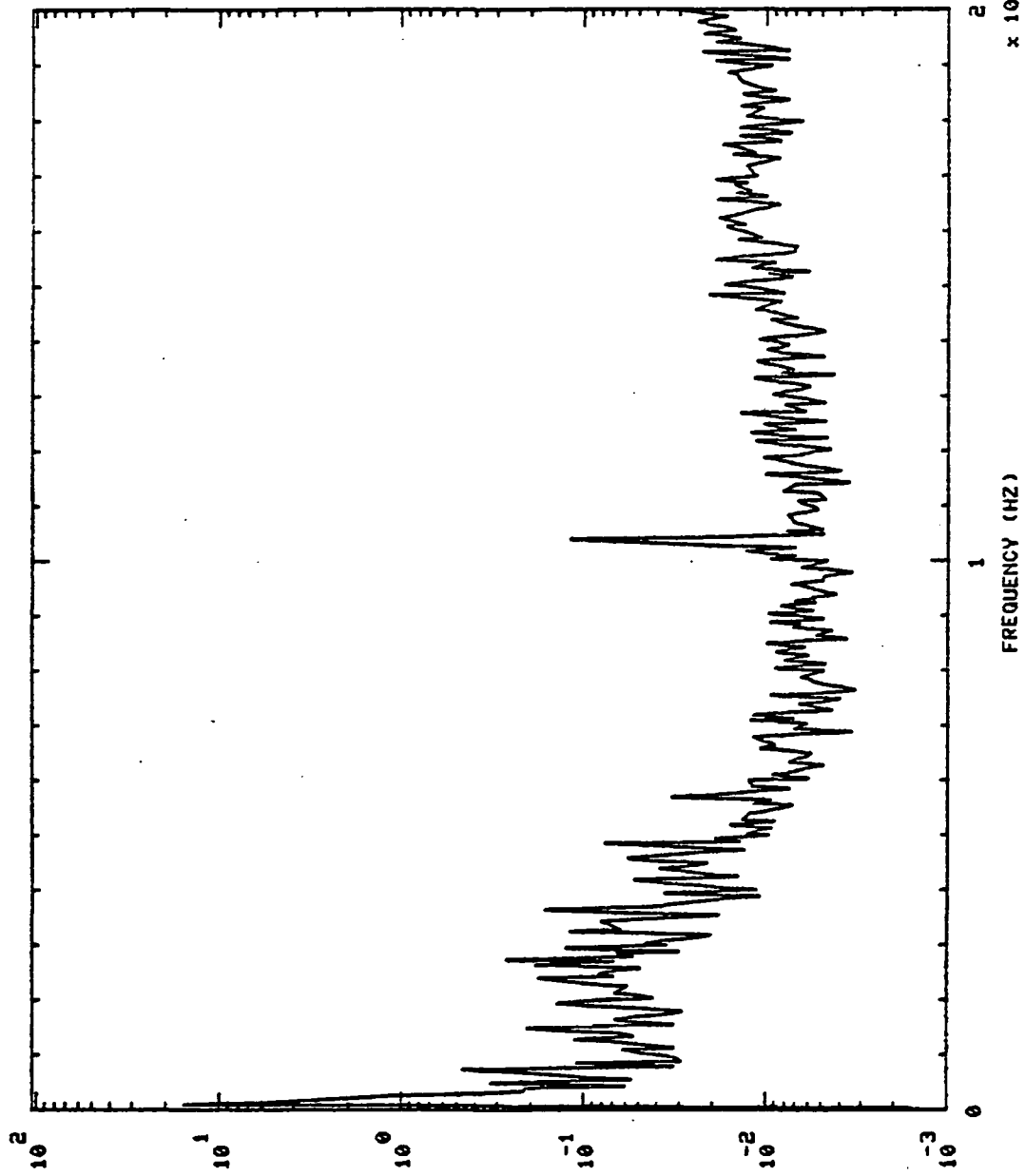
P SQ / HZ

901306 HPOP DS PR S→ 6.01H0,'S





901306 HPOP DS PR S+ 35.0140,'S



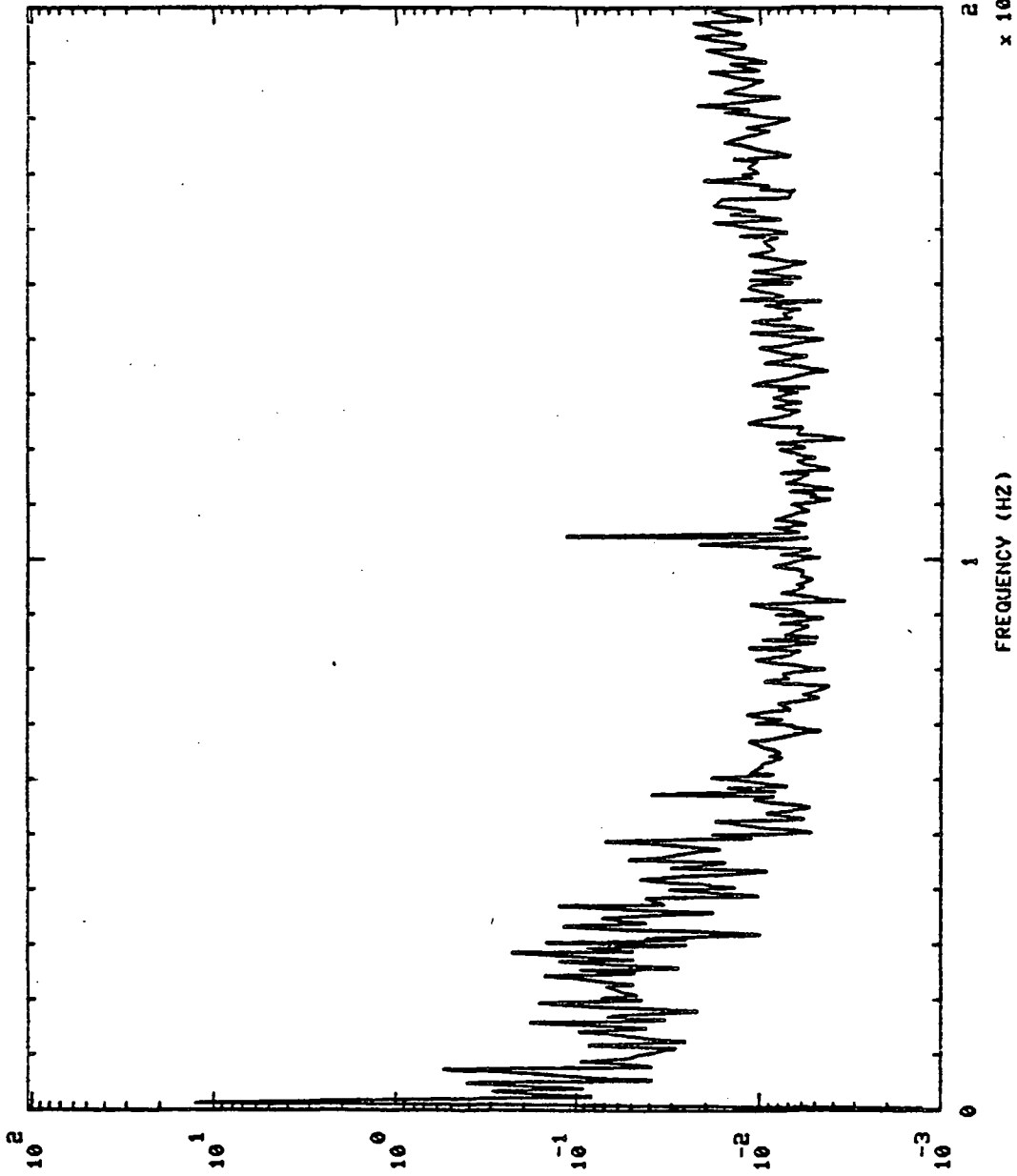
PSD / HZ

$10^4$   
x  $10^4$

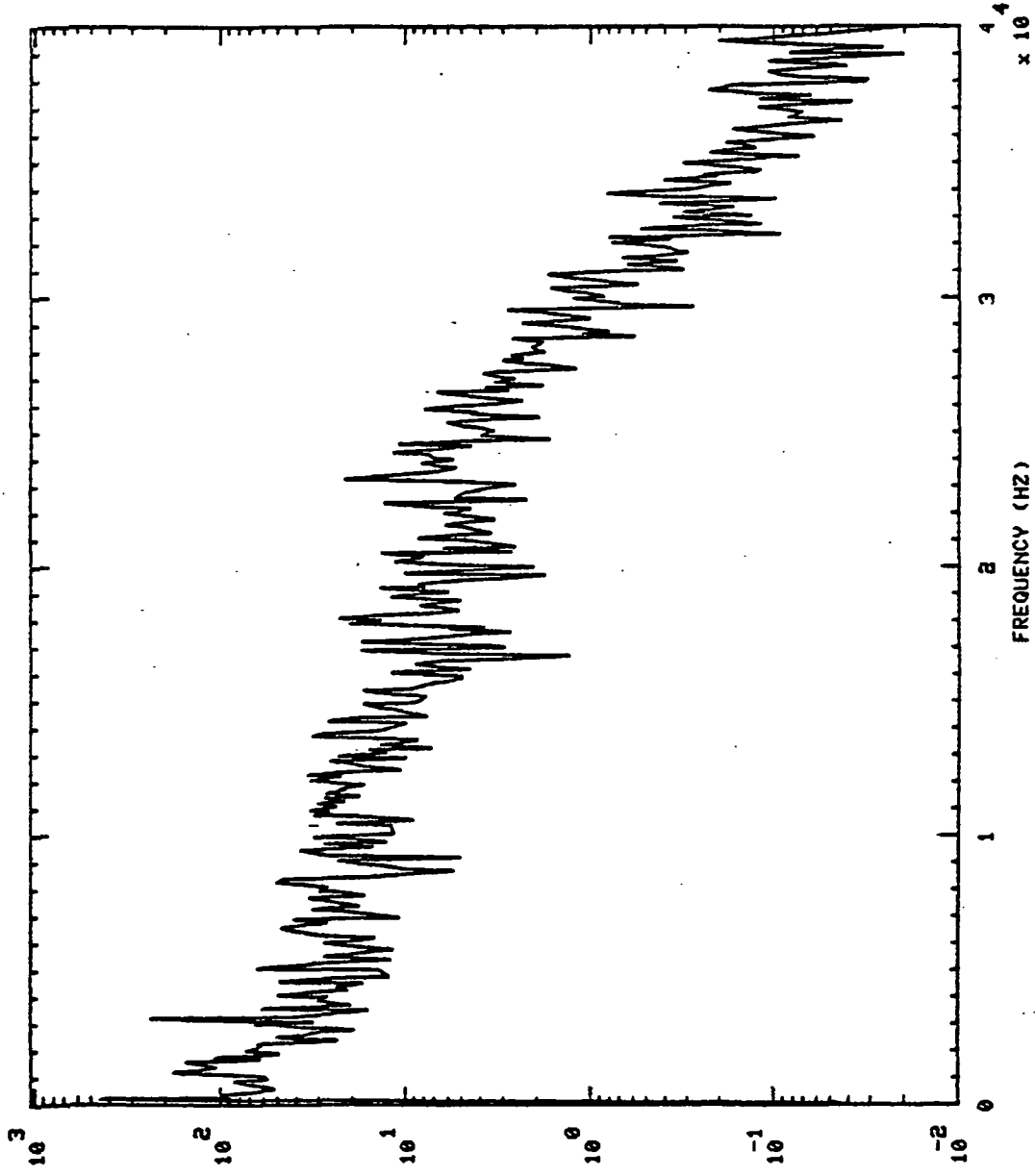
FREQUENCY (HZ)

S+ 70.01H0,'S

901306 HPOP DS PR

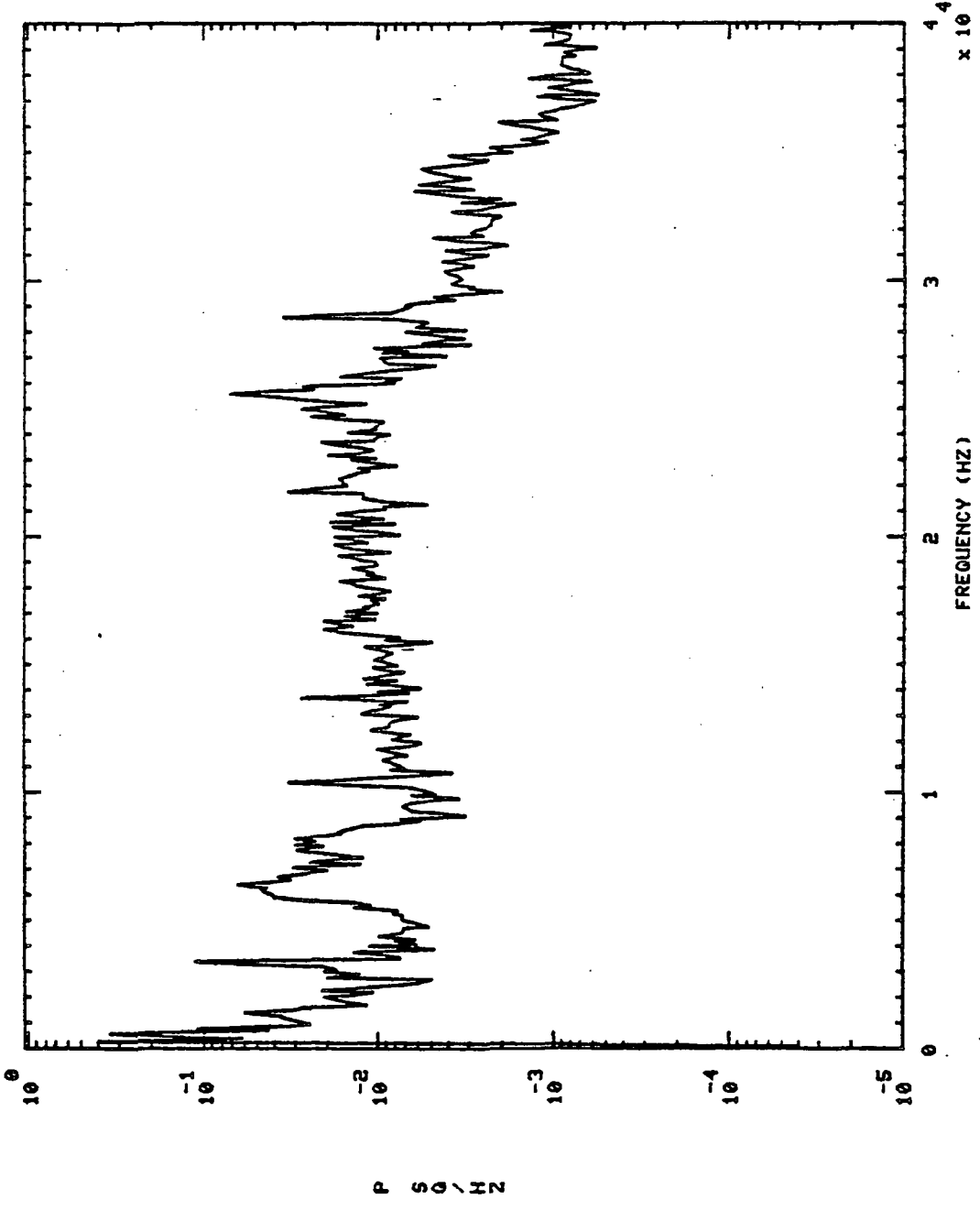


901306 MCC HOT GAS IN PR S+ 5.01H0,'S

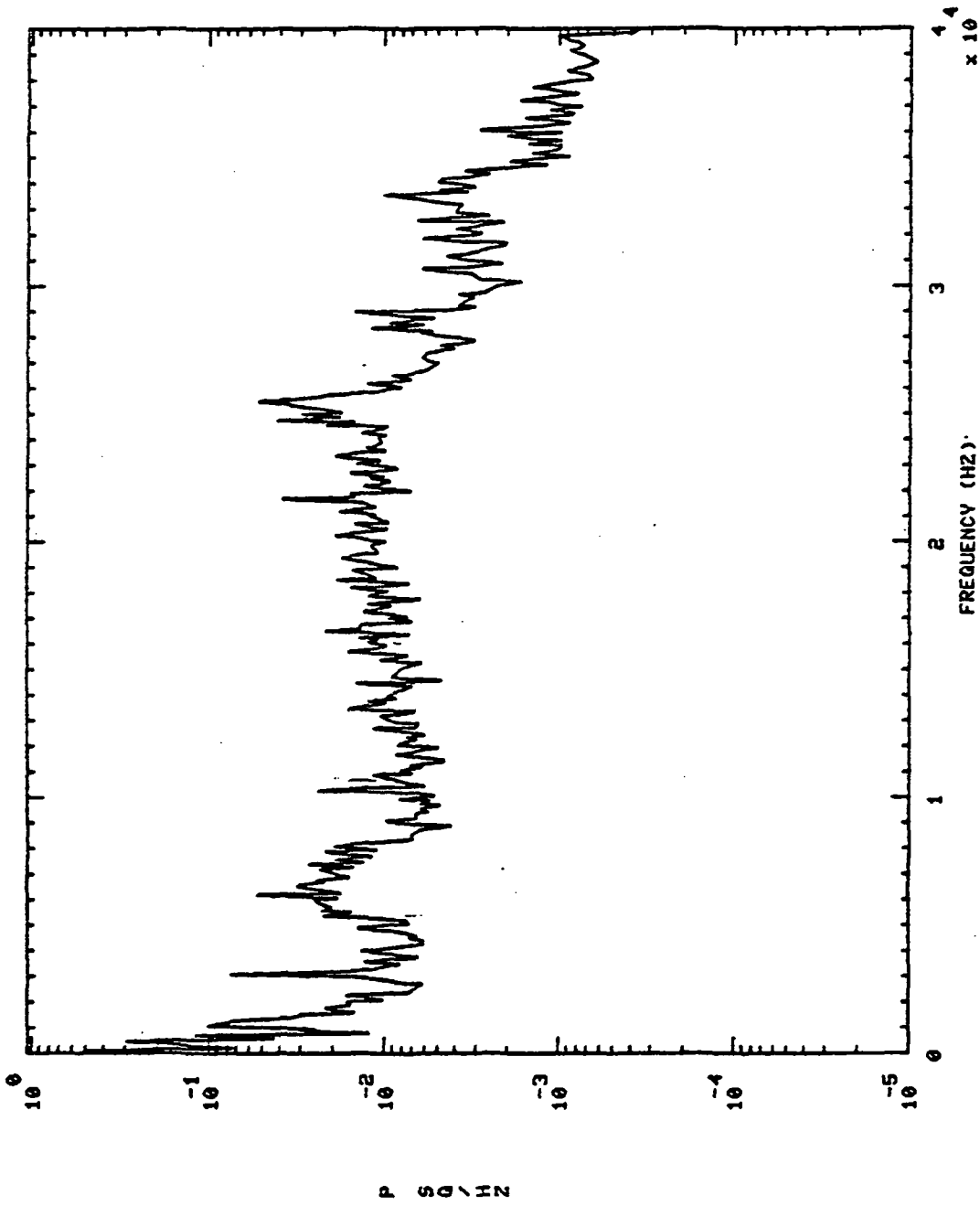


P S G ^ 2 / H Z

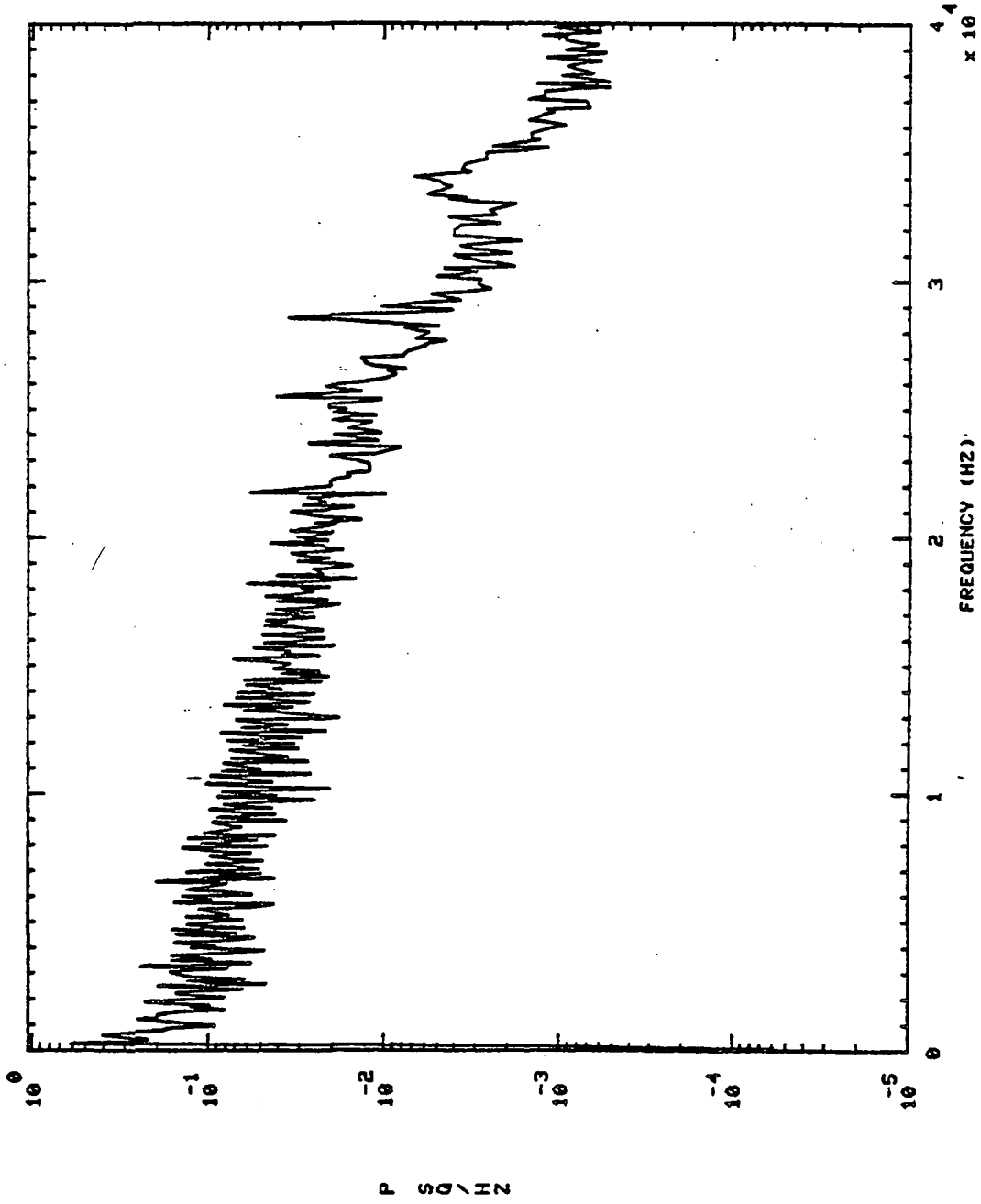
981306 MCC HOT GAS IN PR S+ 20.01HG,'S



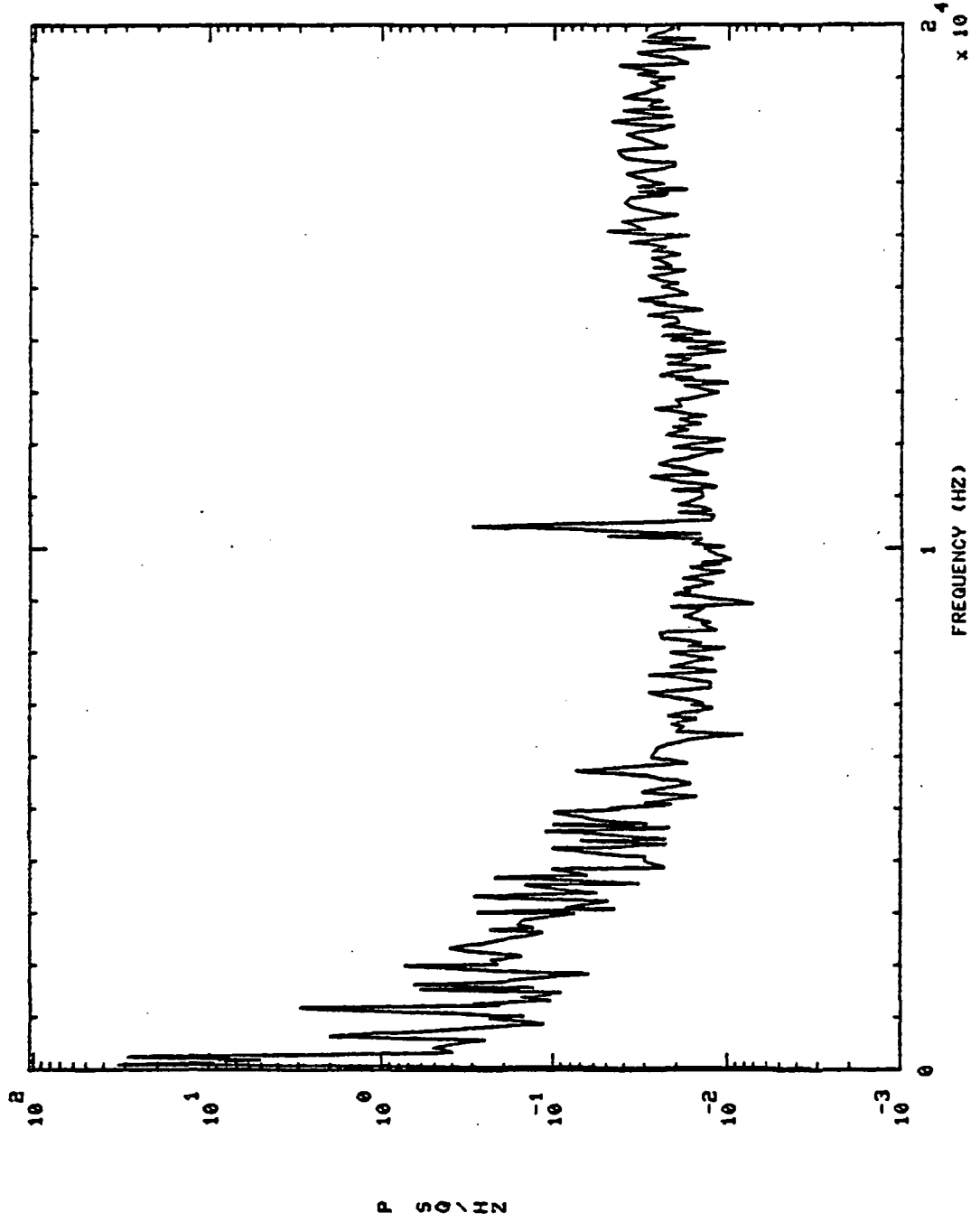
901306 MCC HOT GAS IN PR S+ 50.01H0,'S



901306 MCC HOT GAS IN PR S+ 75.01H0,'S



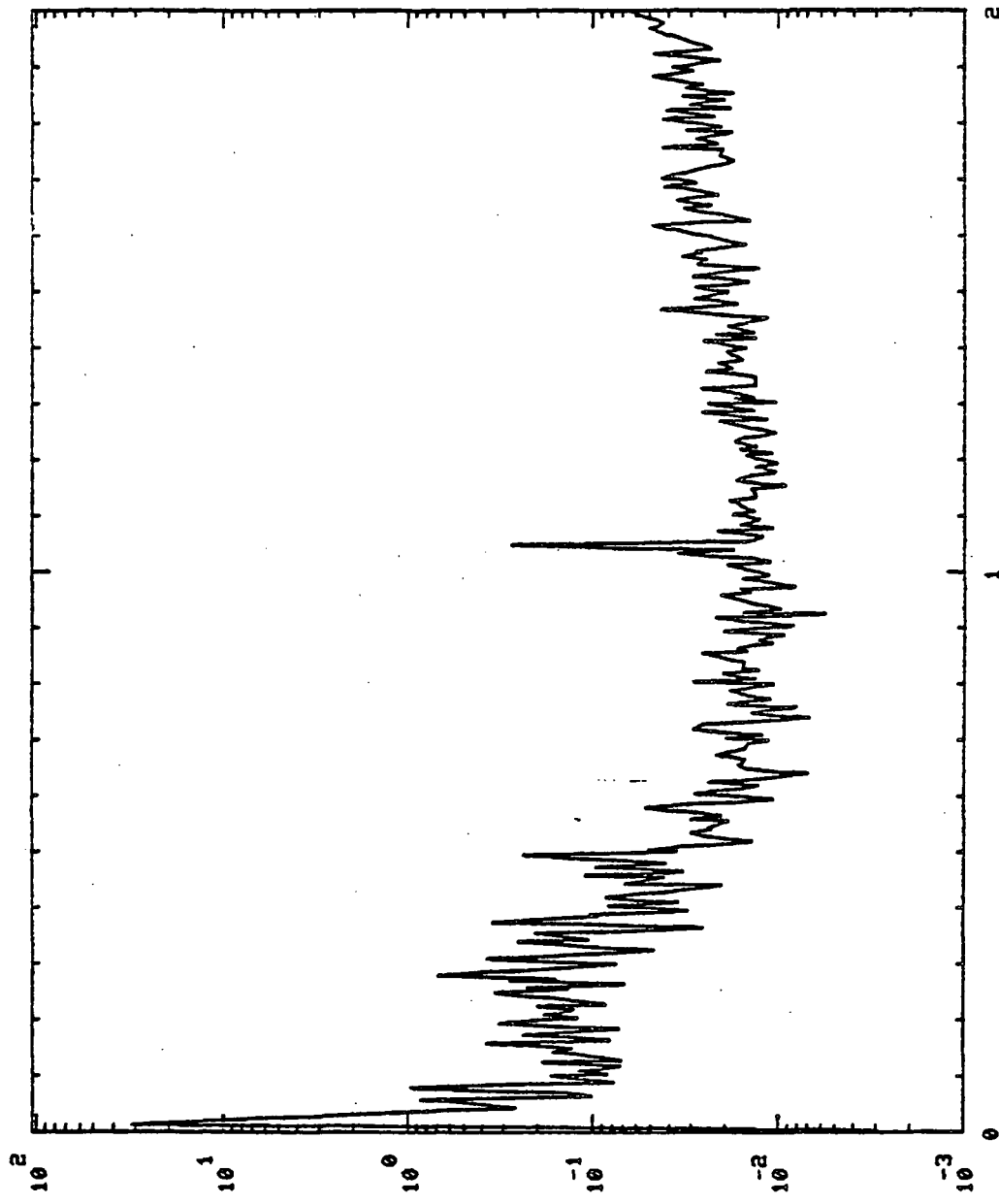
901306 PBP DS PR S+ 5.01H0,'S



S+ 35.01H0,'S

PBP DS PR

901306

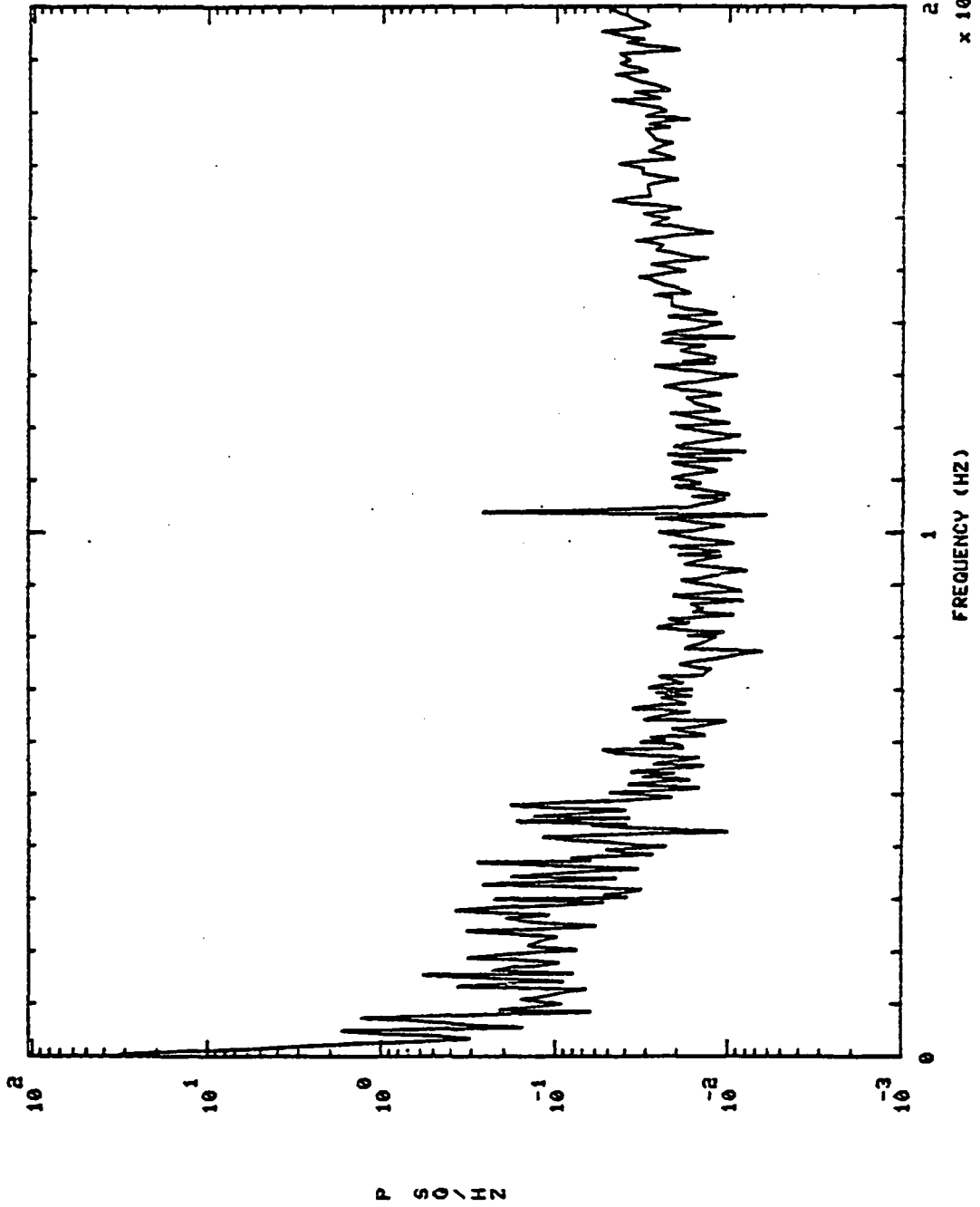


FREQUENCY (HZ) x 10<sup>4</sup>

P SQ\HN



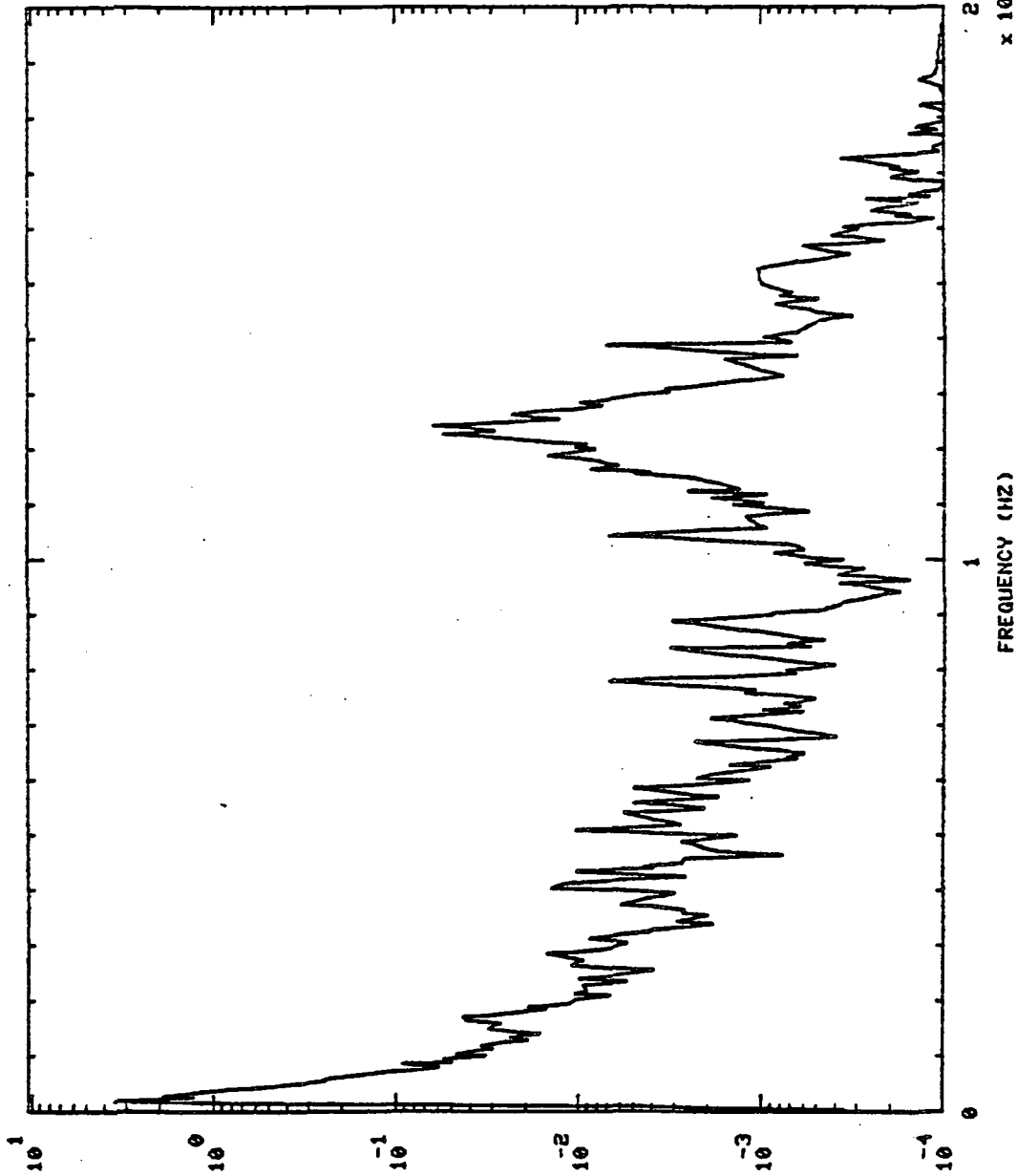
901306 PBP DS PR S+ 70.01H0,'S



St 5.01H0,'S

FPB FUEL MAN PR

901306

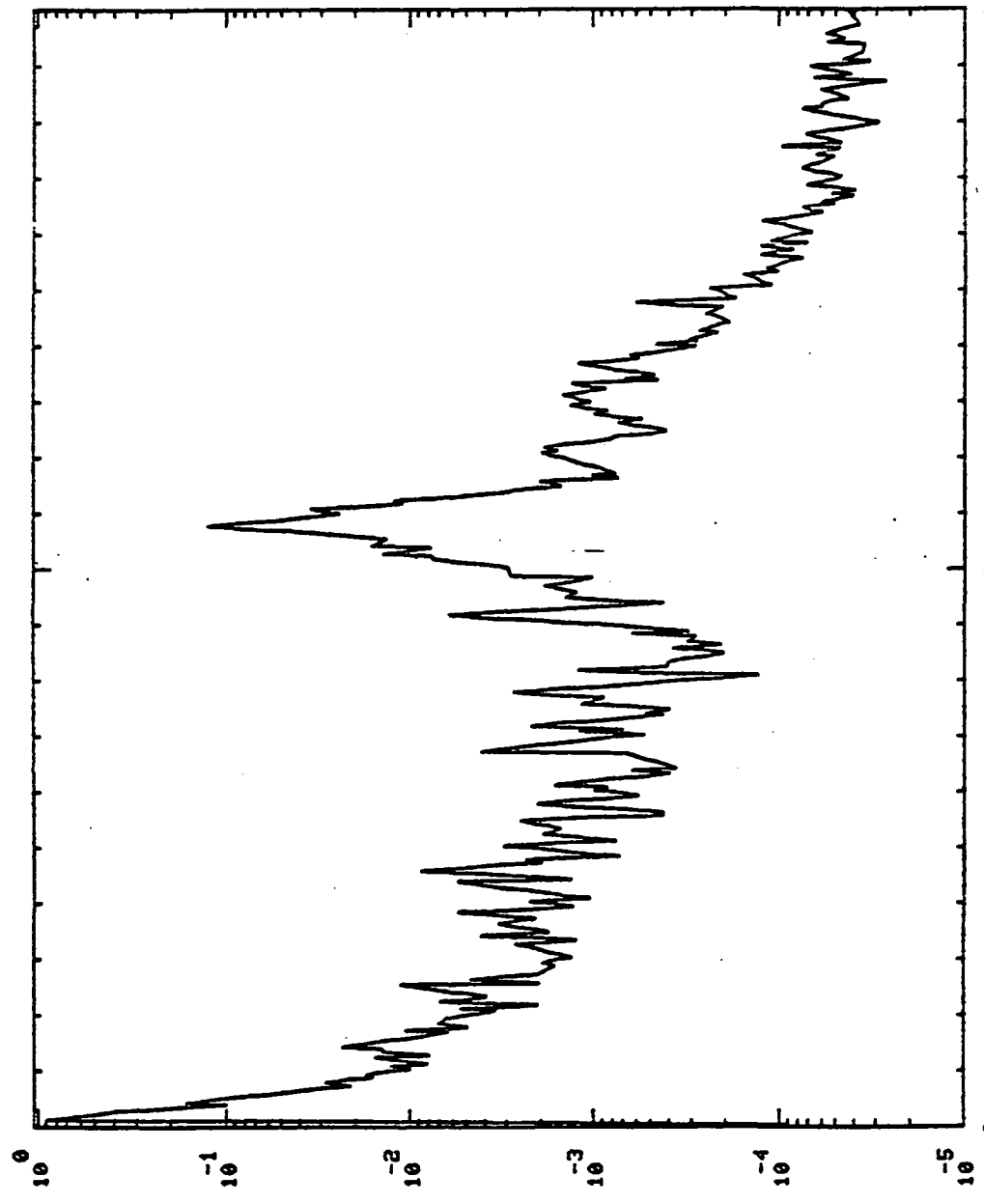


P SQ/HZ

2.4  
 $\times 10^4$

FREQUENCY (HZ)

901306 FPB FUEL MAN PR S+ 20.01H0,'S



P S Q / H Z

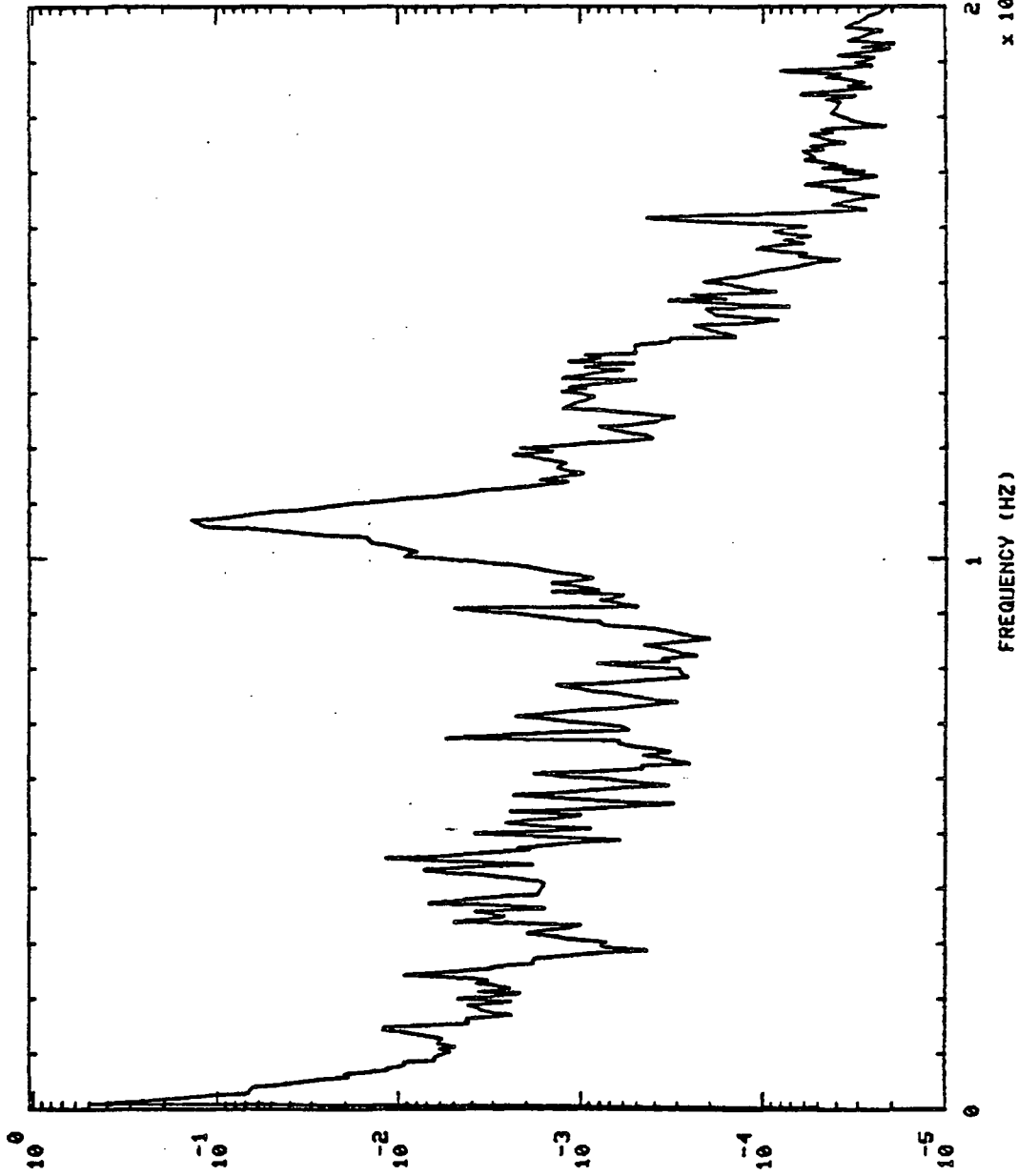
10<sup>4</sup>  
x 10

1  
FREQUENCY (HZ)

S+ 50.0110, 'S

FPB FUEL MAN PR

901306

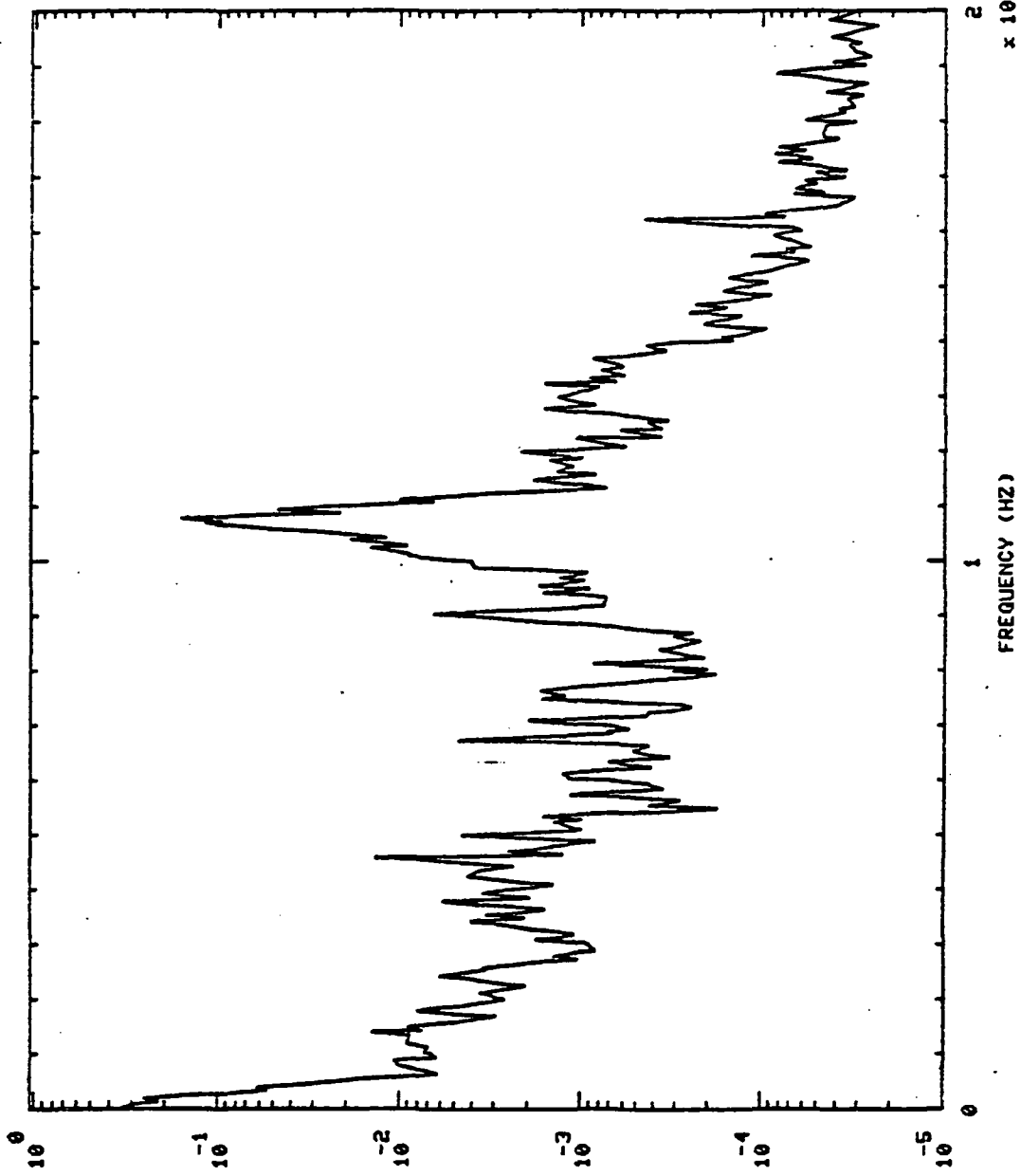


P S D / HZ

FREQUENCY (HZ)

$\times 10^4$

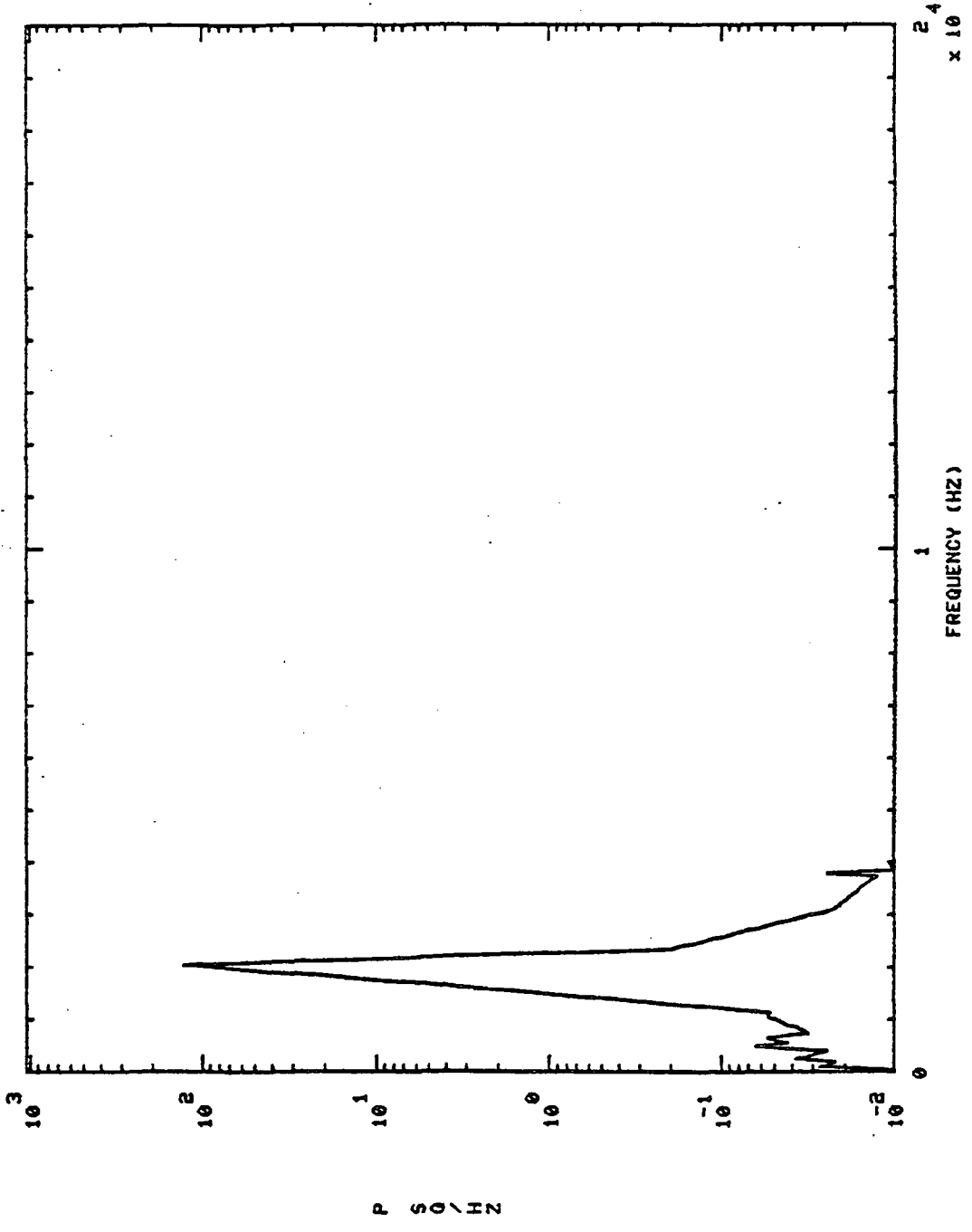
901306 FPB FUEL MAN PR S+ 75.01H0,'S

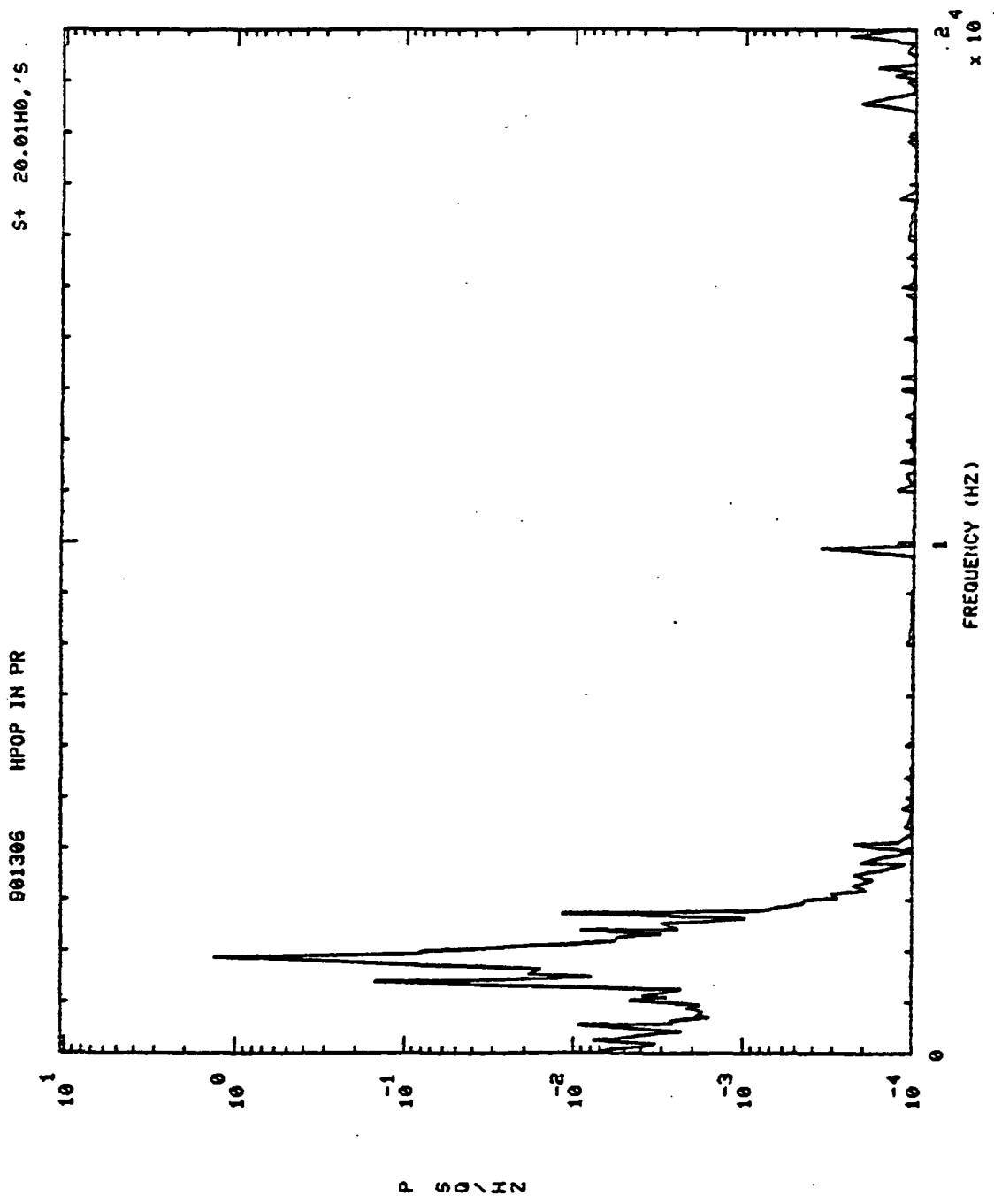


P S D \ H Z

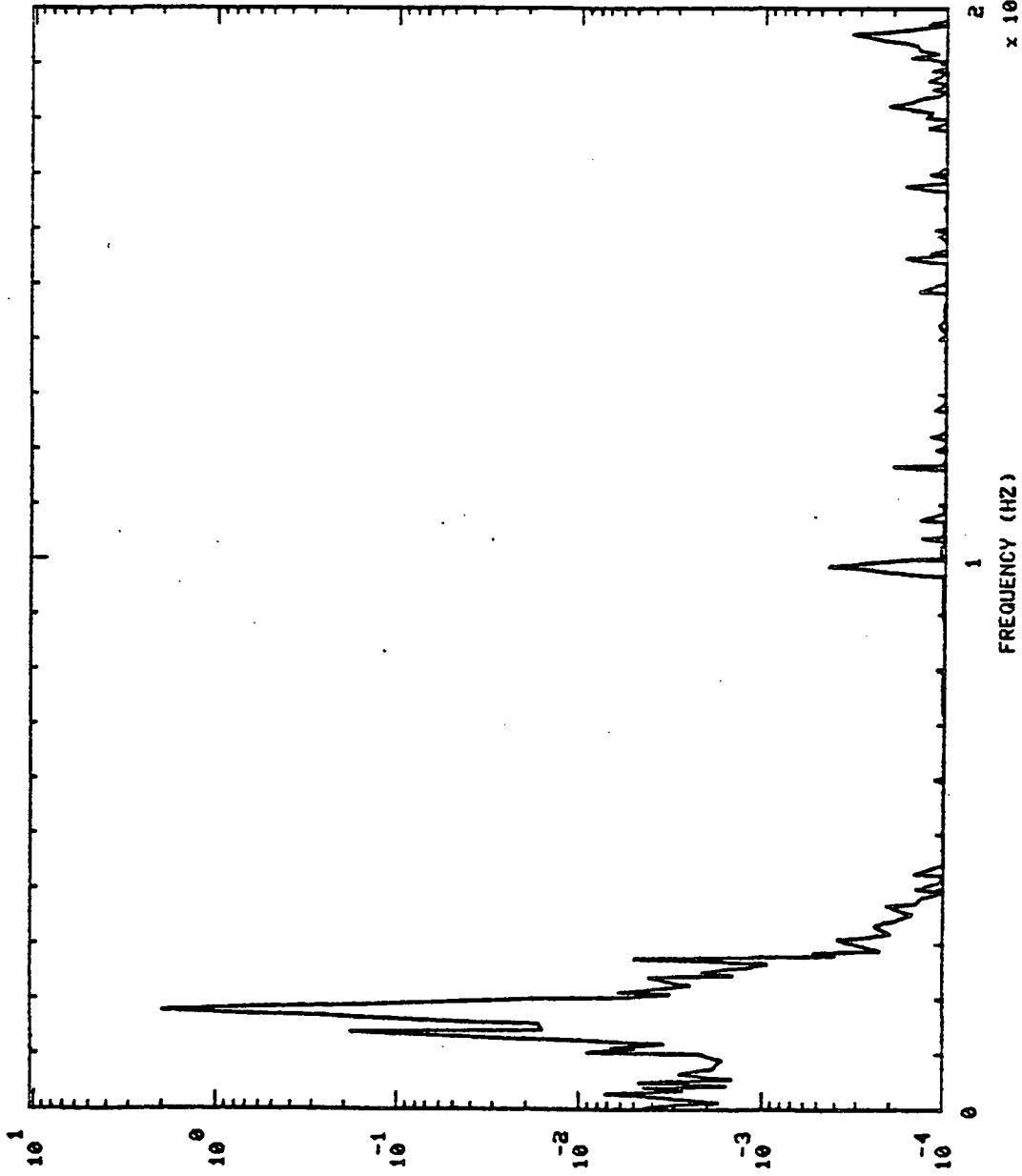
2.4  
x 10

901306 HPOP IN PR St 5.01H0,'S





901306 HPOP IN PR S+ 50.01H0,'S



P S D / H Z



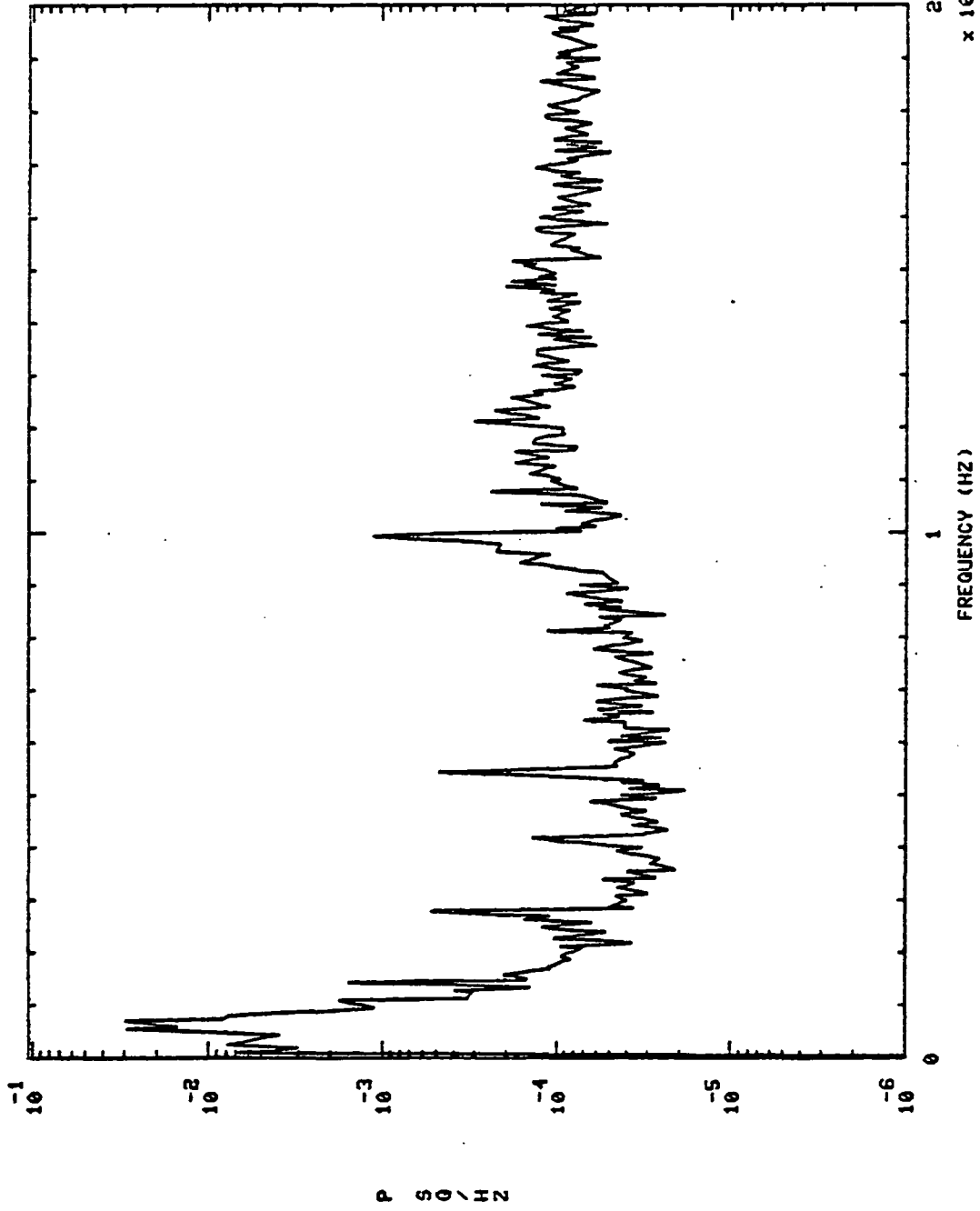
901306 HPOP IN PR S+ 75.01H0,'S

901306 HPOP IN PR

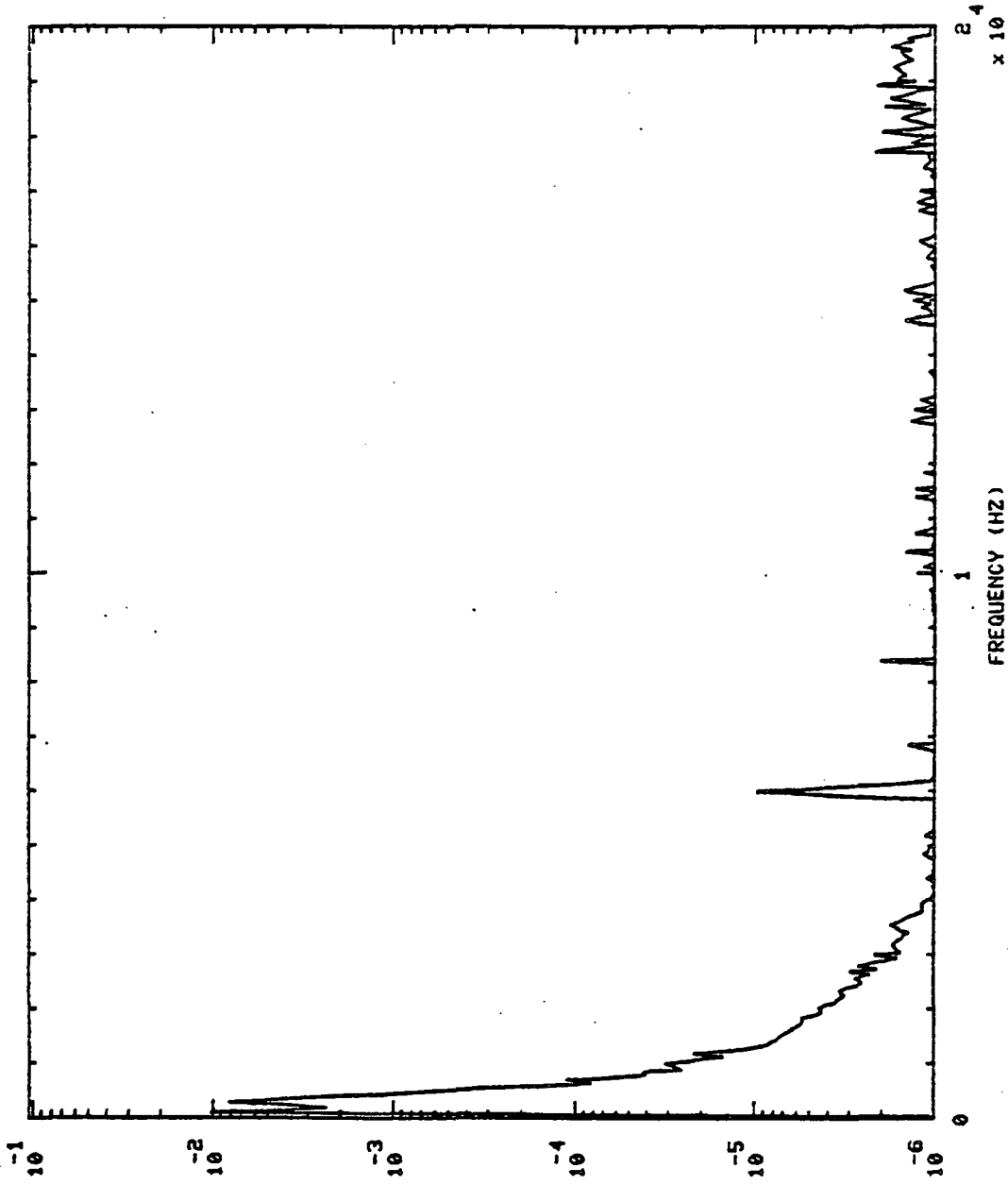
901306

HPOP IN PR

S+ 75.01H0,'S



901306 HI LX I PR S+ 5.01H0,'S

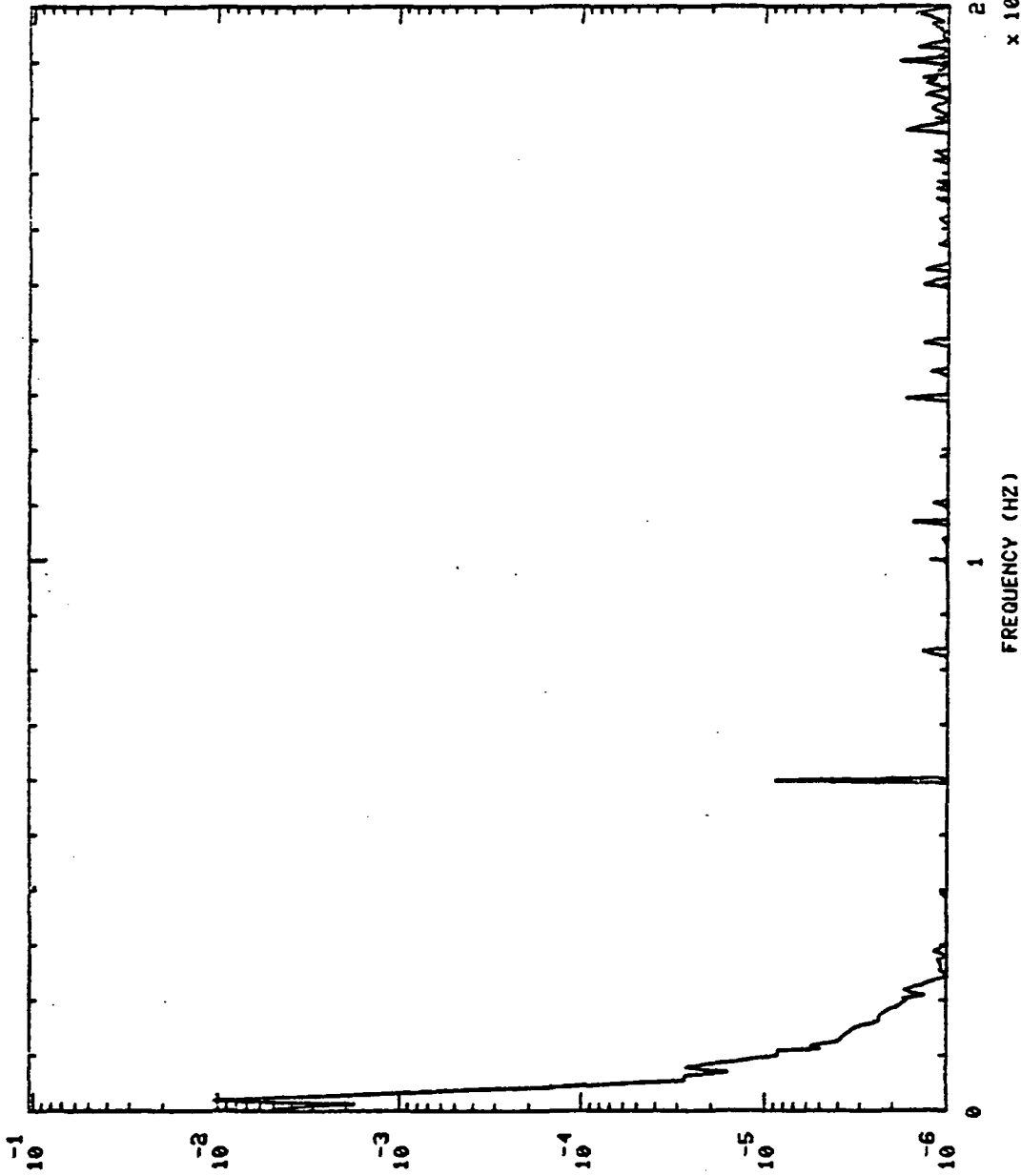


$10^4$   
 $\times 10$

1  
FREQUENCY (HZ)

P S D / H Z

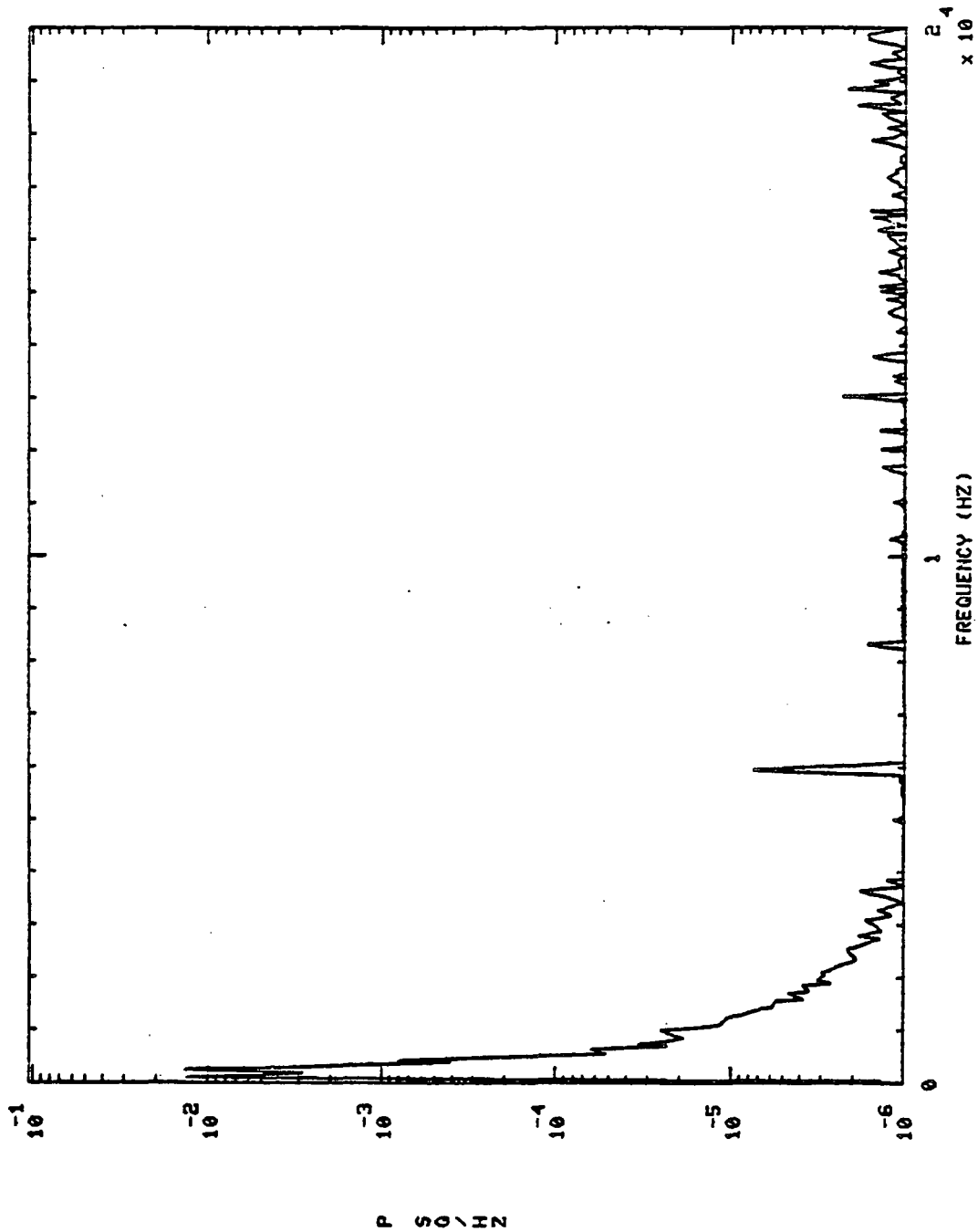
901306 HI LX I PR S+ 20.01H0,'S



P S G / H Z

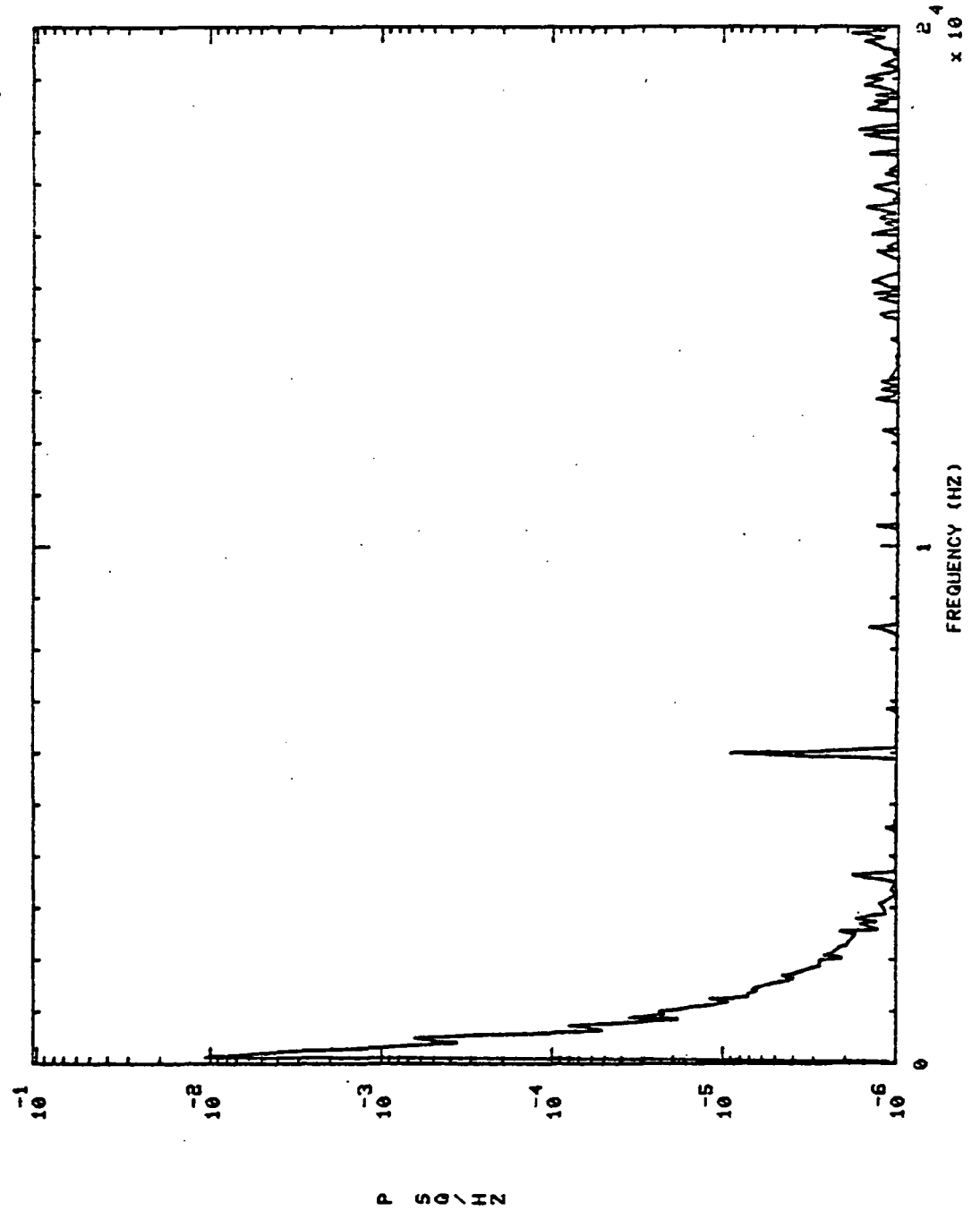
S+ 50.01H0,'S

901306 HI LX I PR

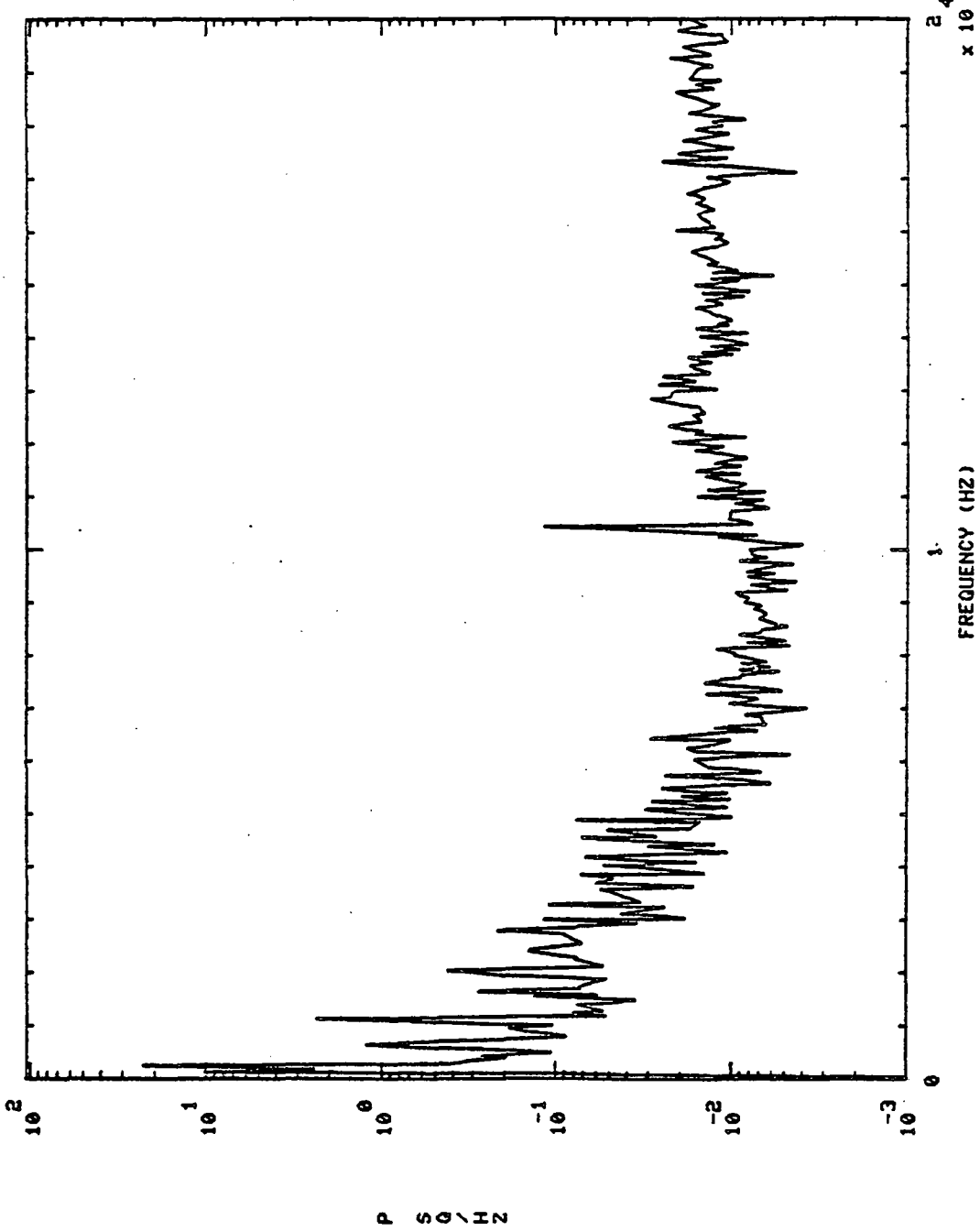


$10^4$   
 $\times 10^4$

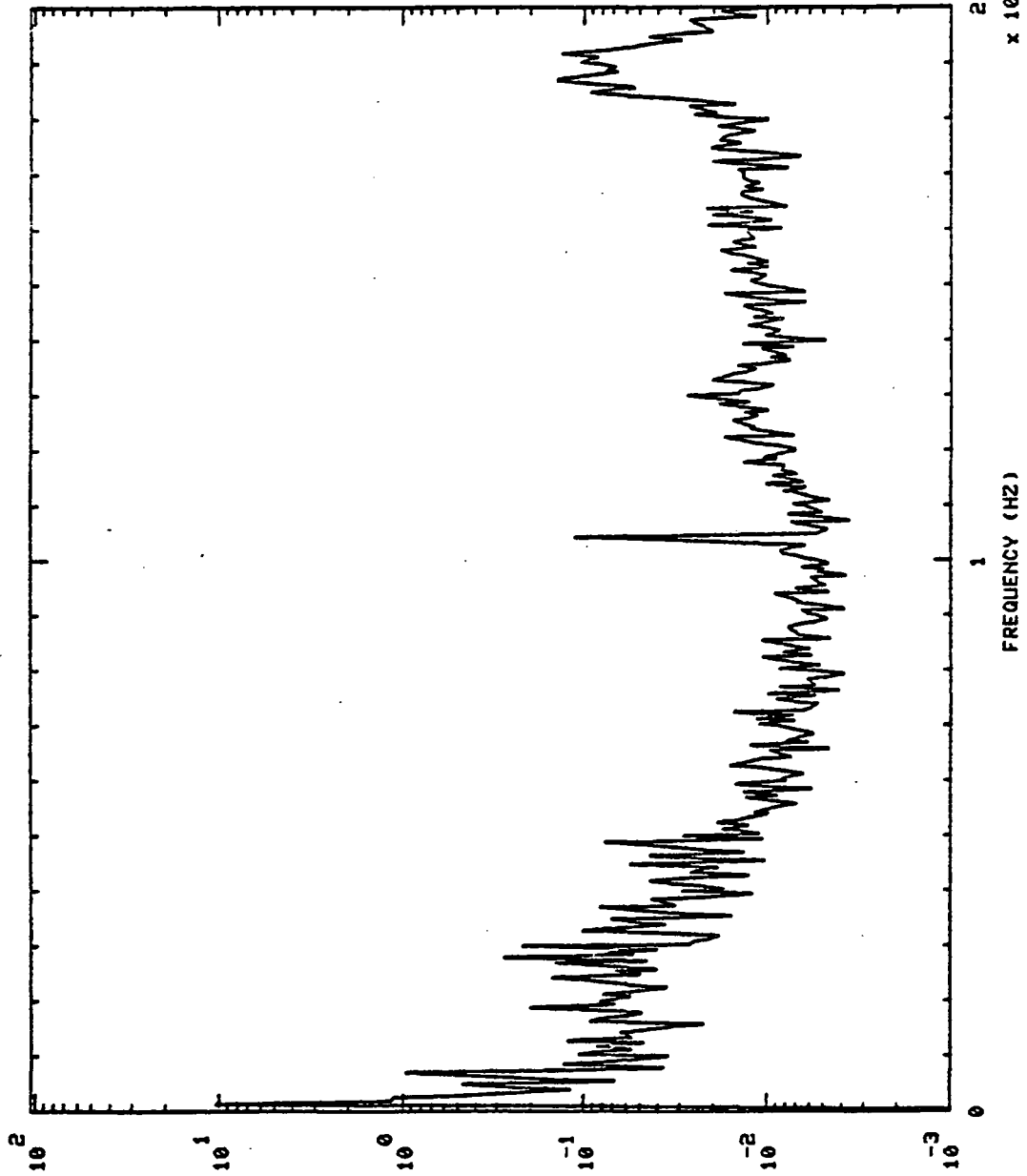
901306 HI LX I PR S+ 75.01H0,'S



901367 HPOP DS PR S+ 5.01H0,'S



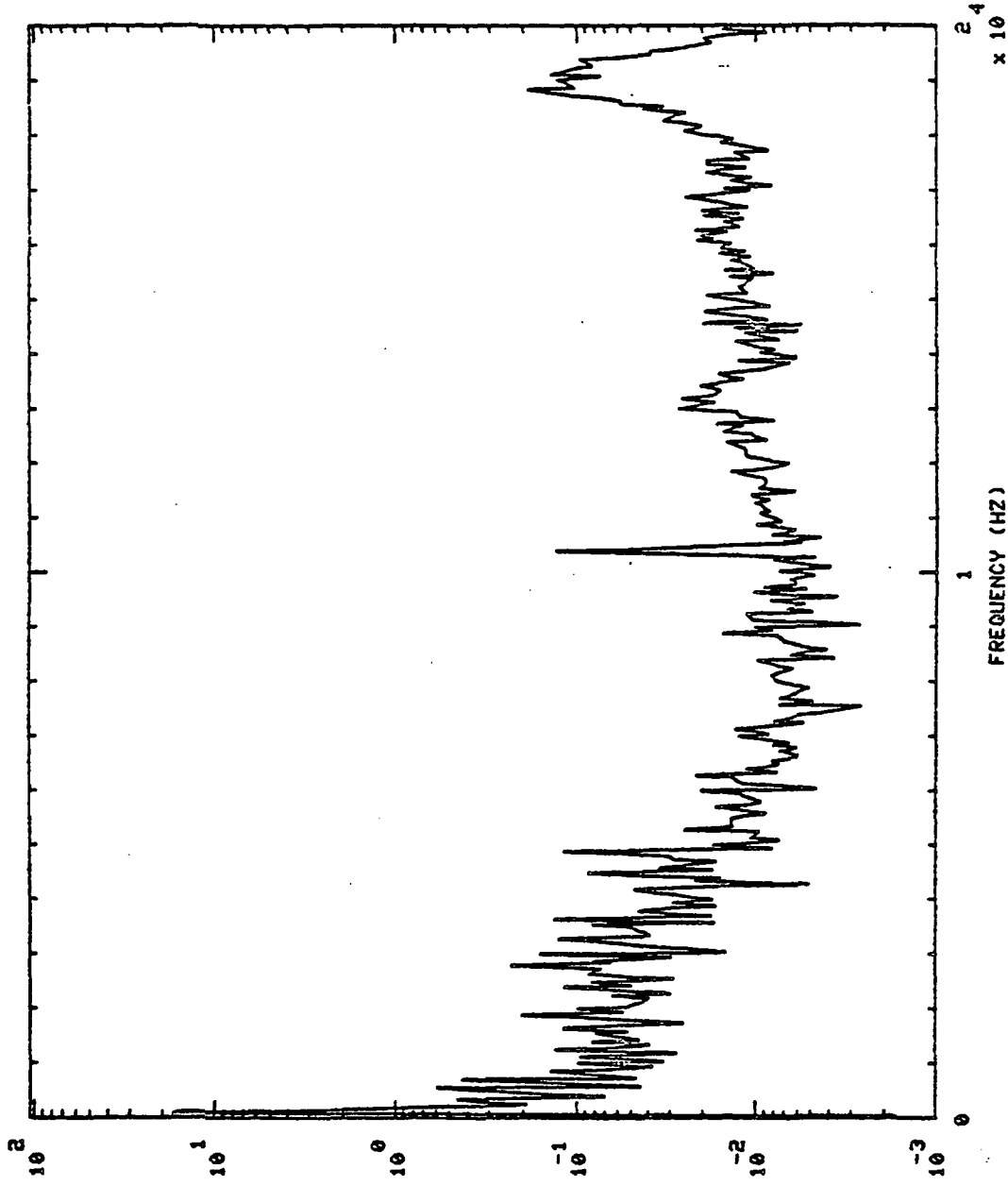
901307 HPOP D9 PR S+ 20.01H0,'S



S+ 45.01H0,'S

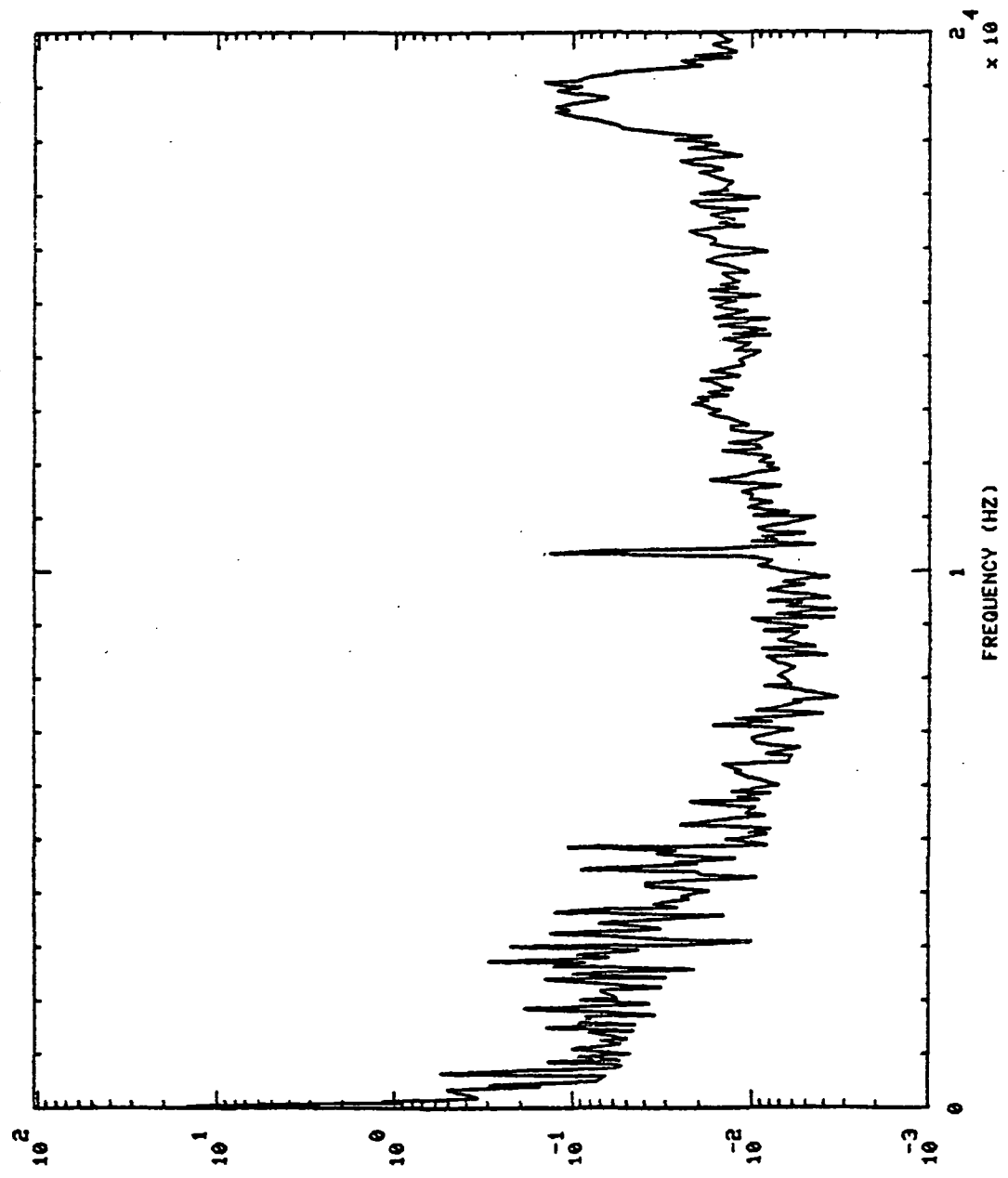
HPOP DS PR

901307



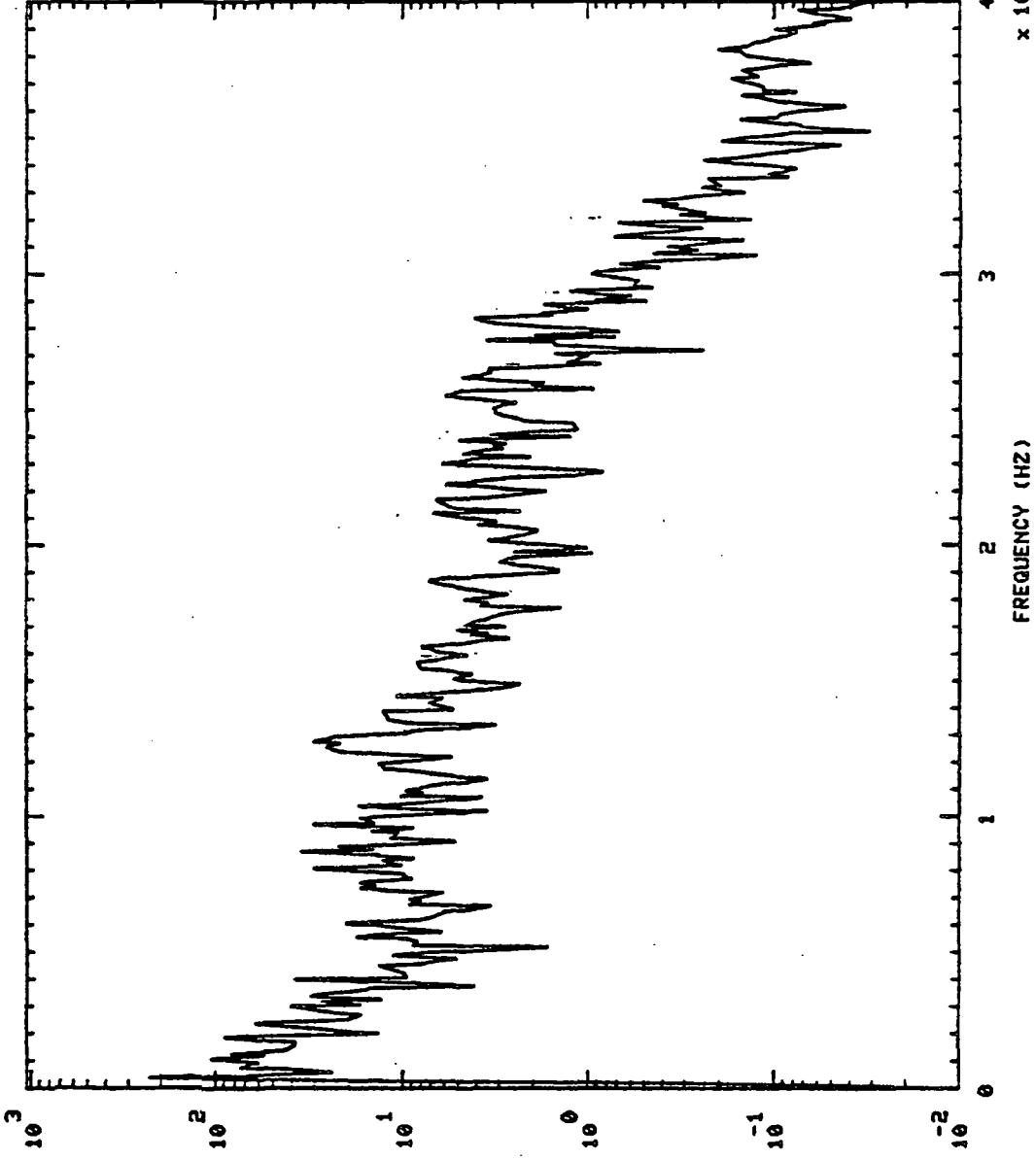


901307 HPOP DS PR S+ 70.01H0,'S



P S G / H Z

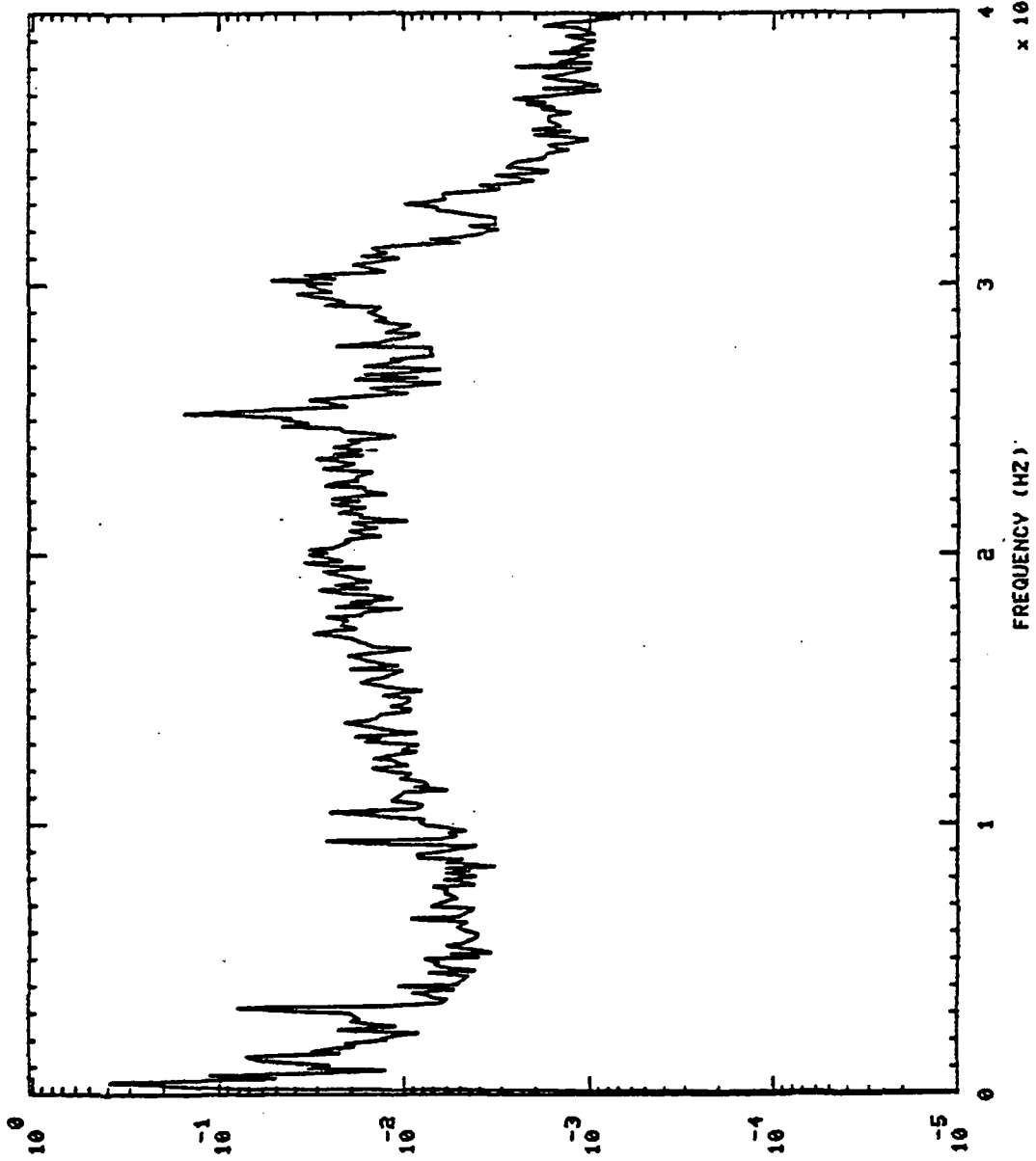
501307 MCC HOT GAS IN PR S+ 5.01H0,6



P S \ N

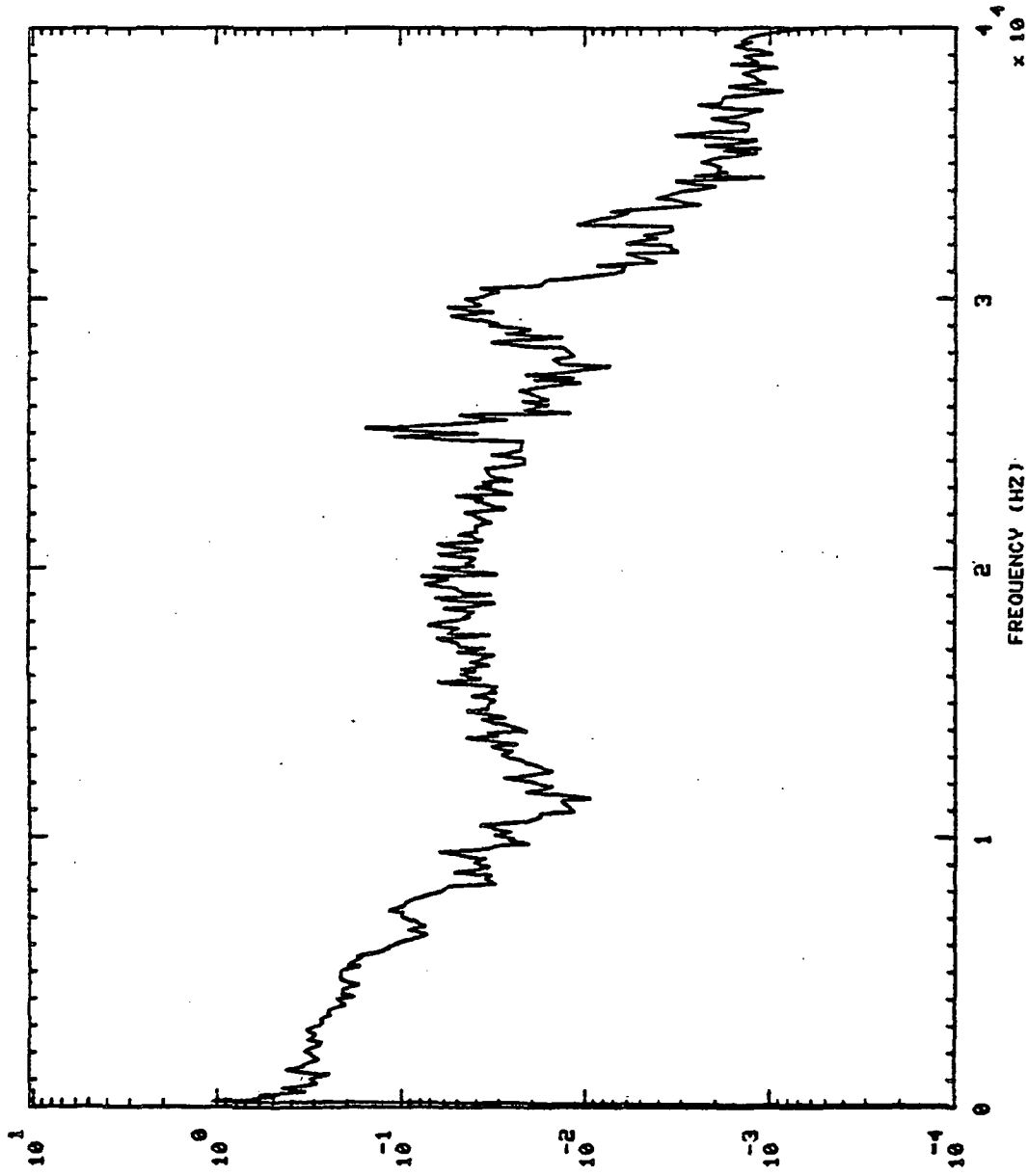
1

901307 MCC HOT GAS IN PR S+ 20.01H0,'S



P S D / H Z

901307 MCC HOT GAS IN PR S+ 45.01H0,'S

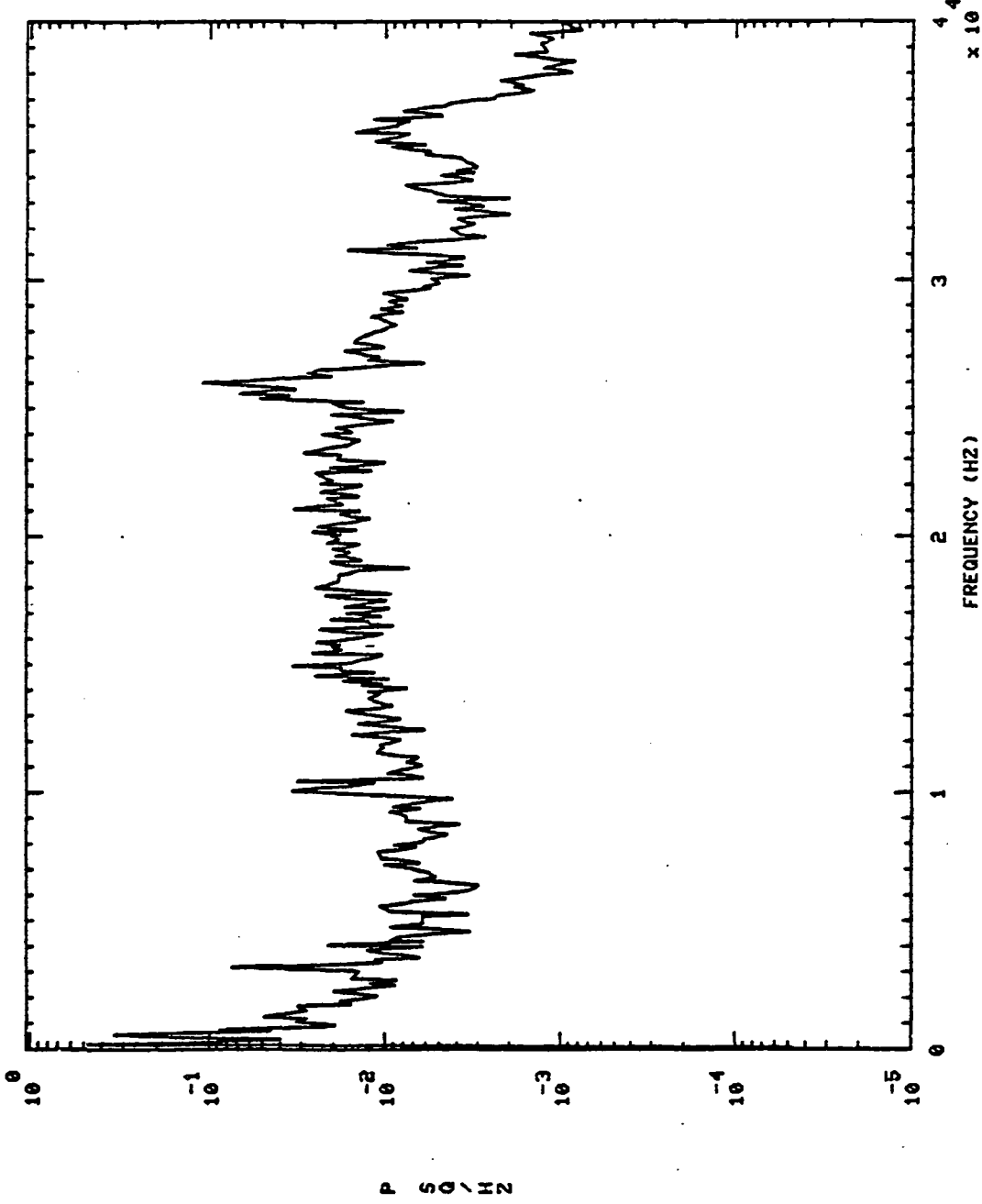


P S O \ H N

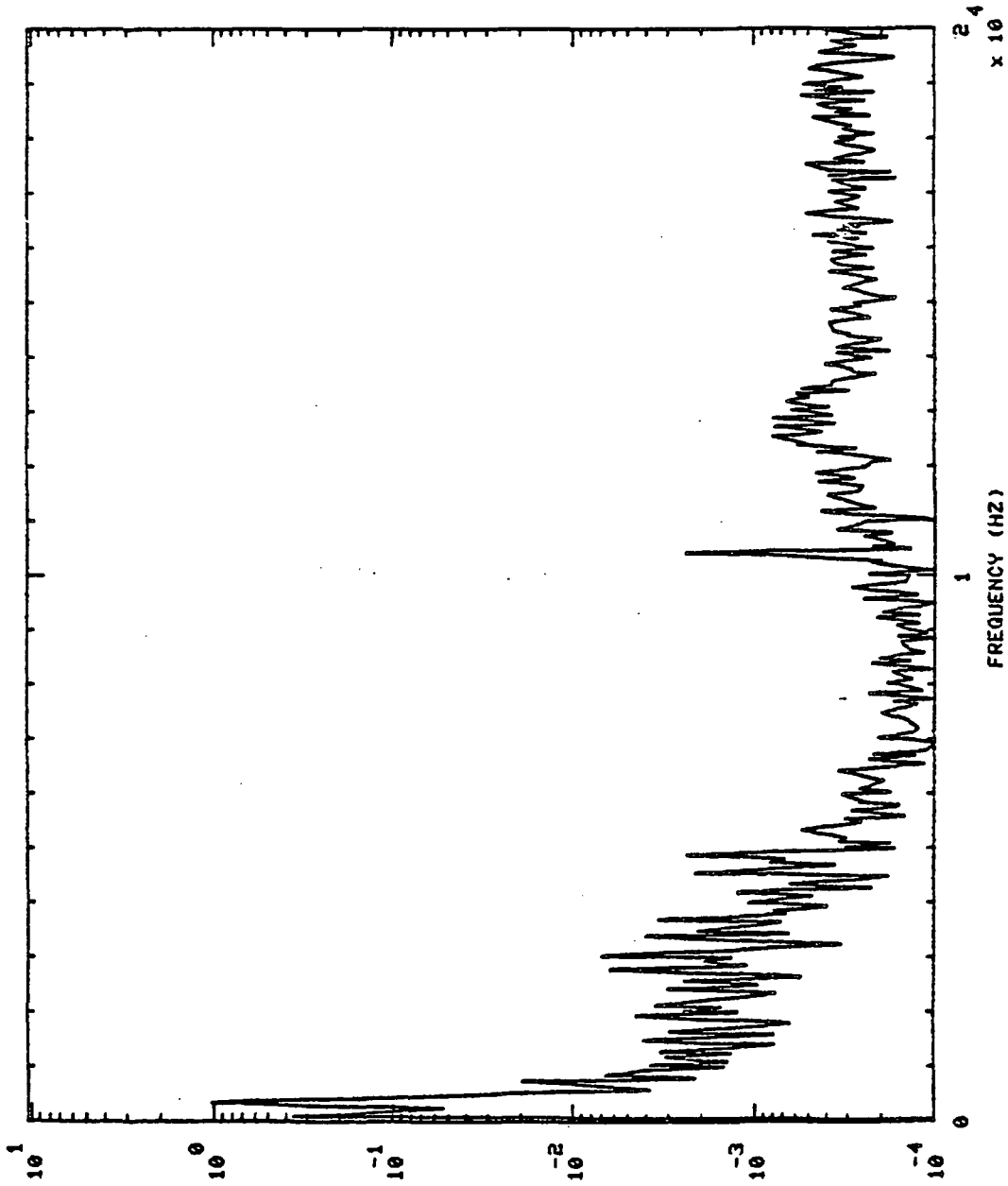
901307

MCC HOT GAS IN PR

S+ 70.01H0,'S

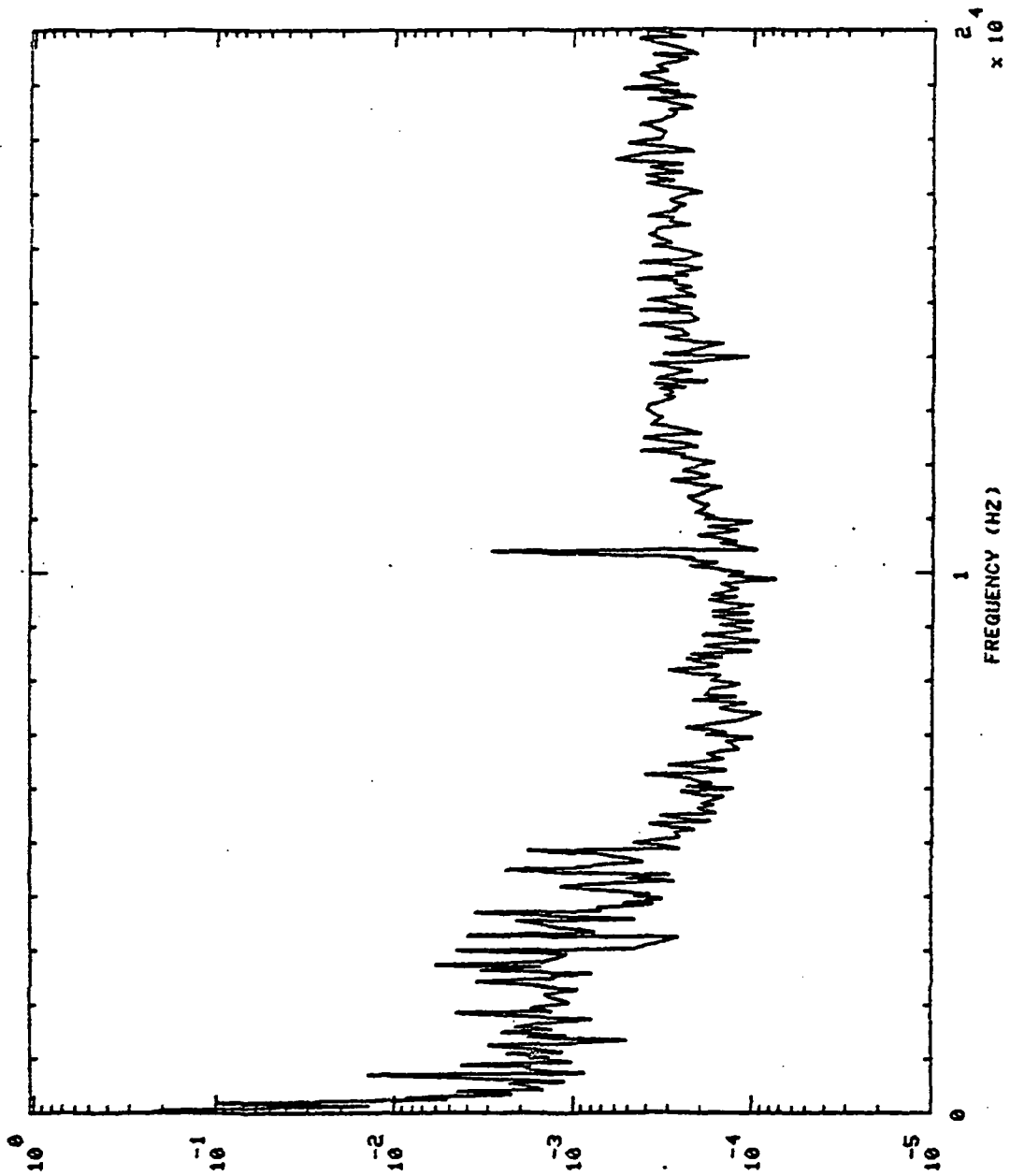


901307 PBP DS PR S+ 5.01H0,'S



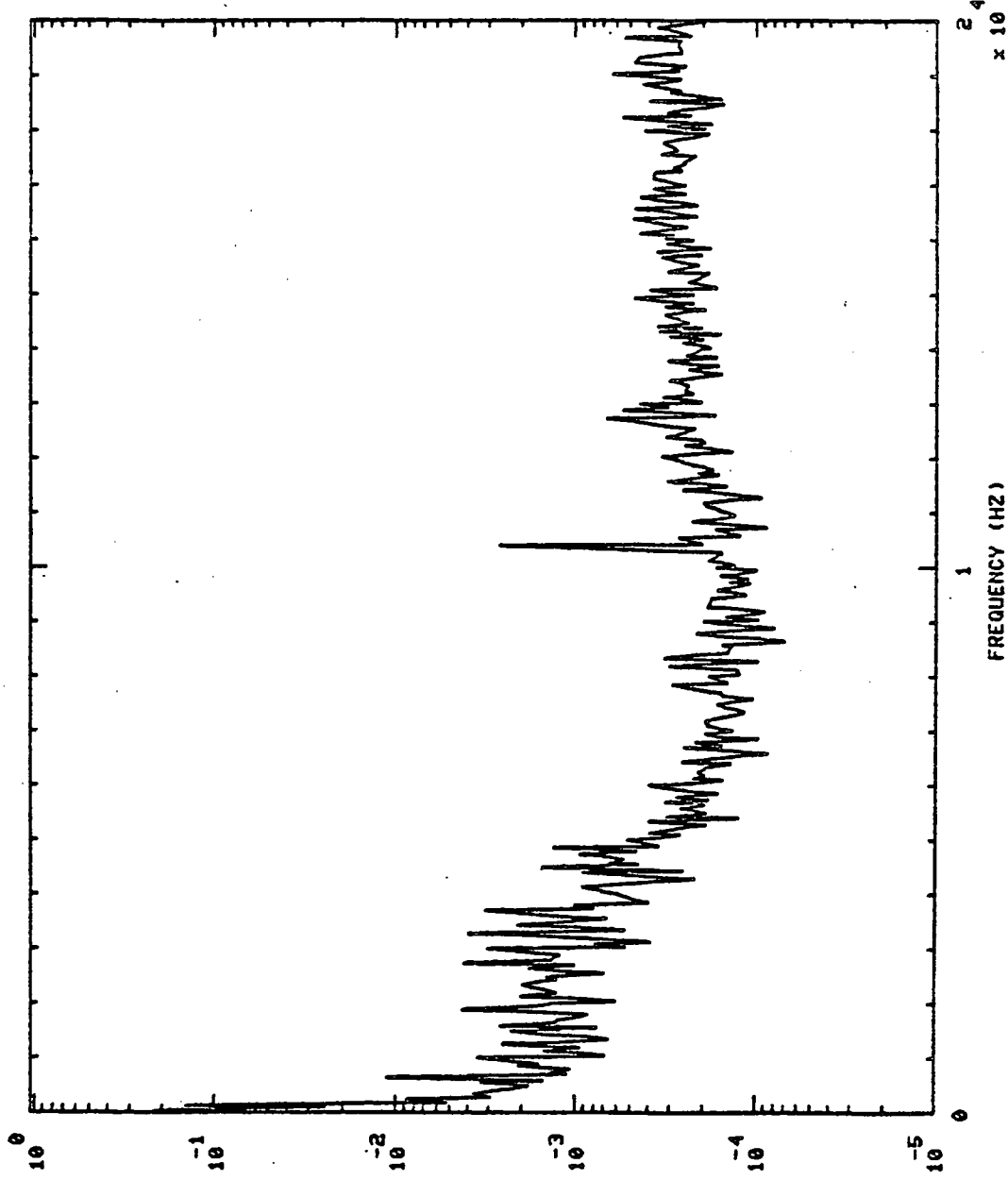
P SQ/MZ

901307 P8P DS PR S+ 20.0110,'S



P SQ/MZ

901307 PBP DS PR S+ 45.01H0,'S



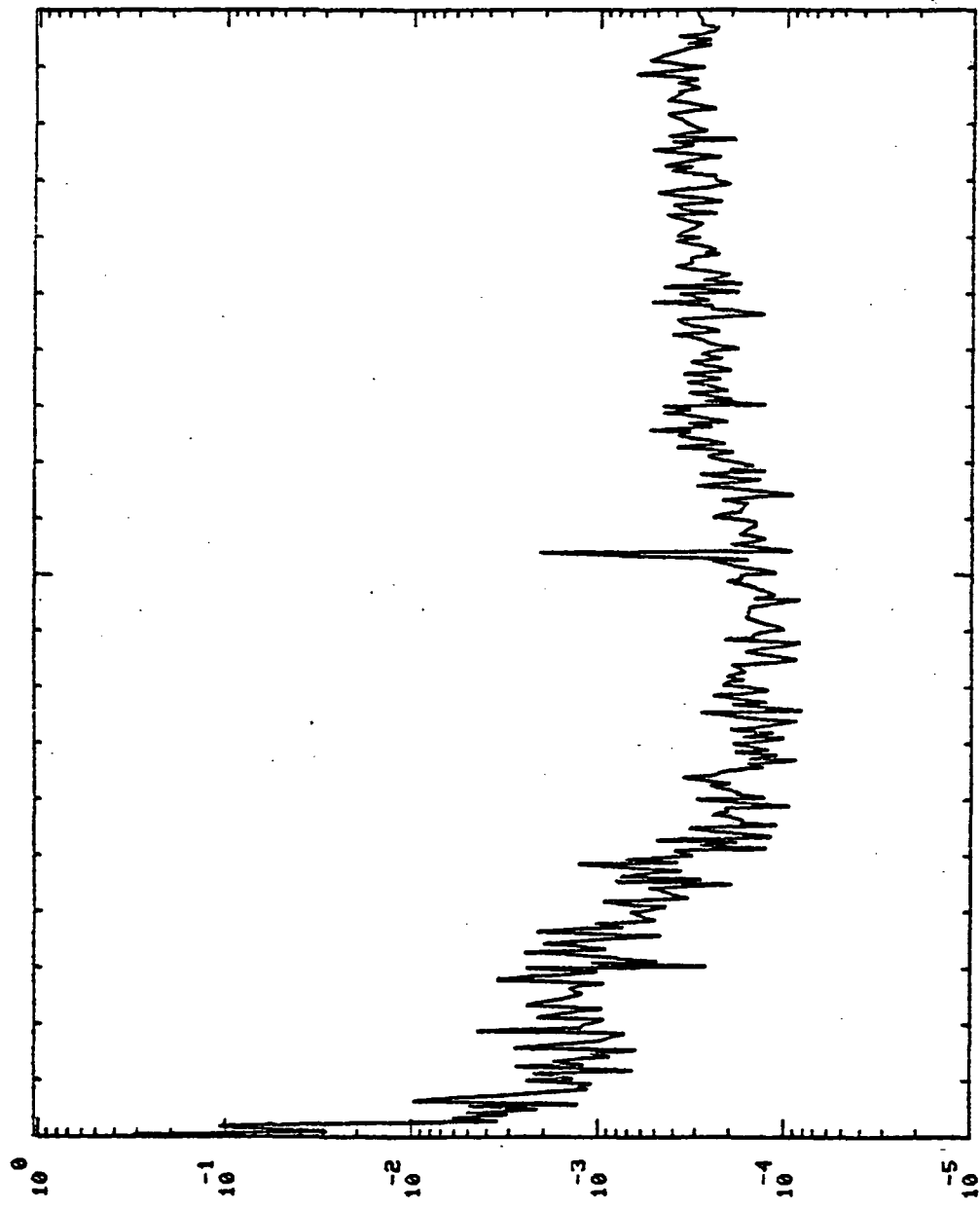
PSD / HZ

FREQUENCY (HZ)

$\times 10^4$



901307 PBP DS PR S+ 70.01H0,'S

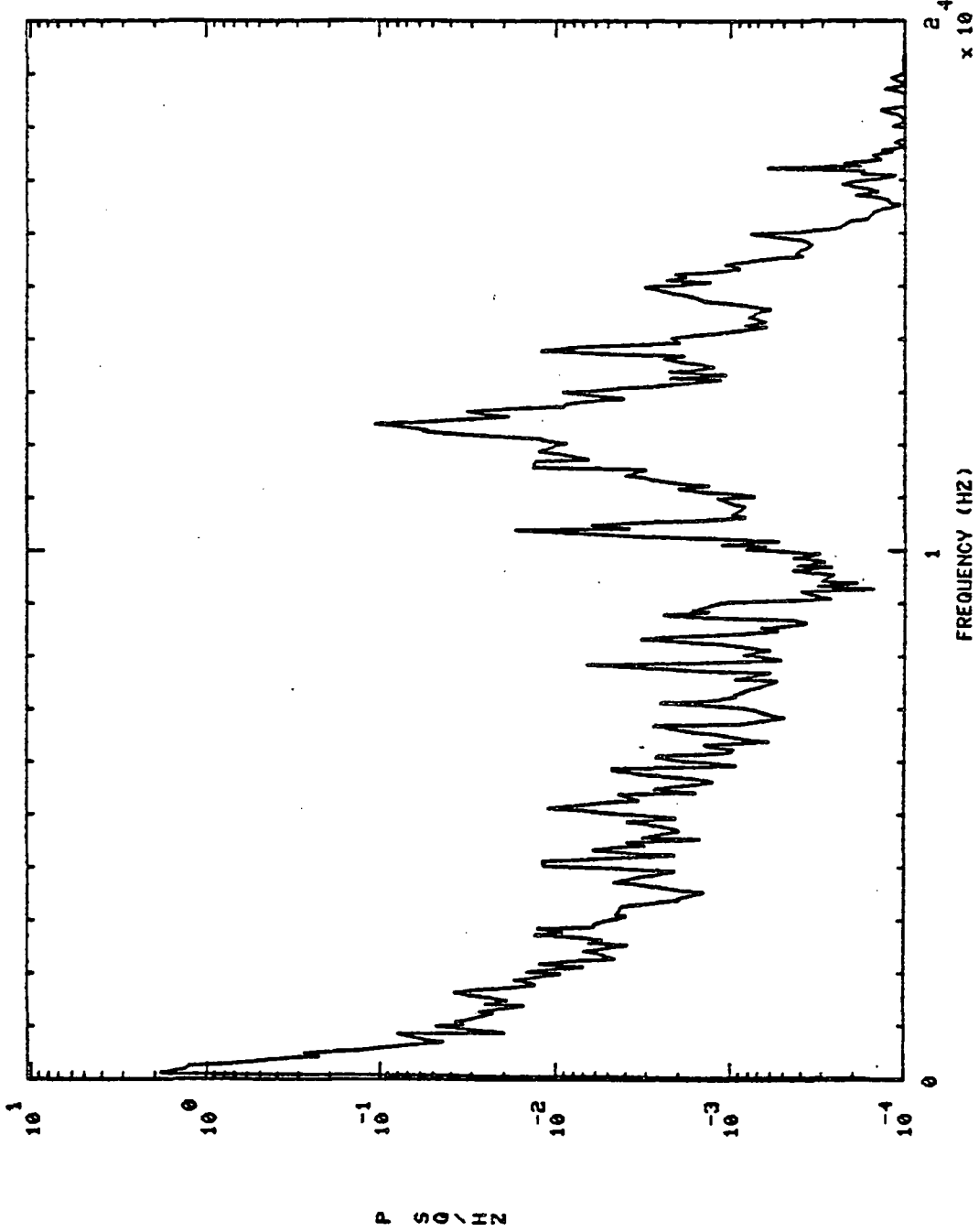


$2 \times 10^4$   
x  $10^4$

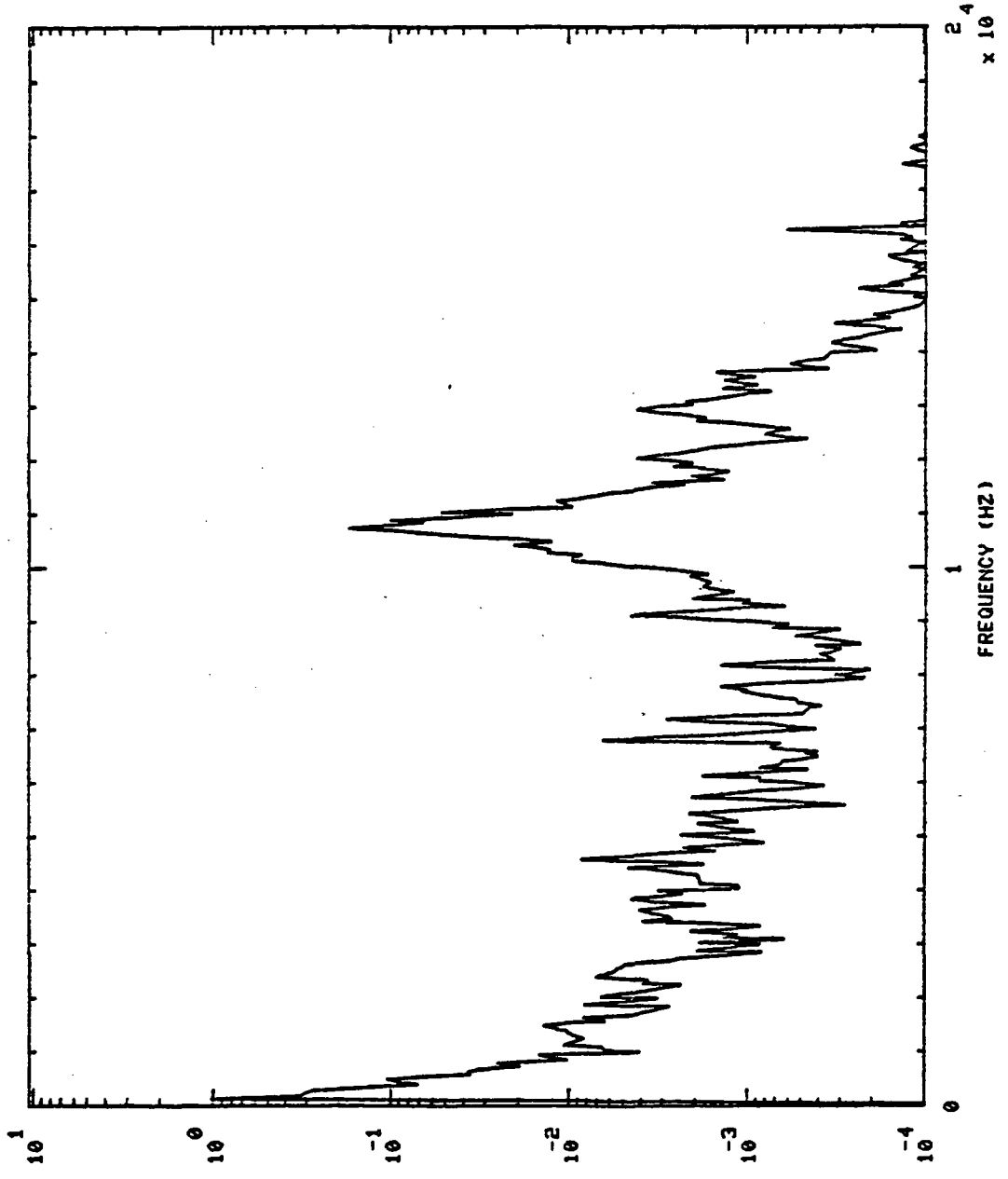
FREQUENCY (HZ)

P S D / H Z

901307 FPB FUEL MAN PR S+ 5.01H0,'S



901307 FPB FUEL MAN PR S+ 20.01H0,'S



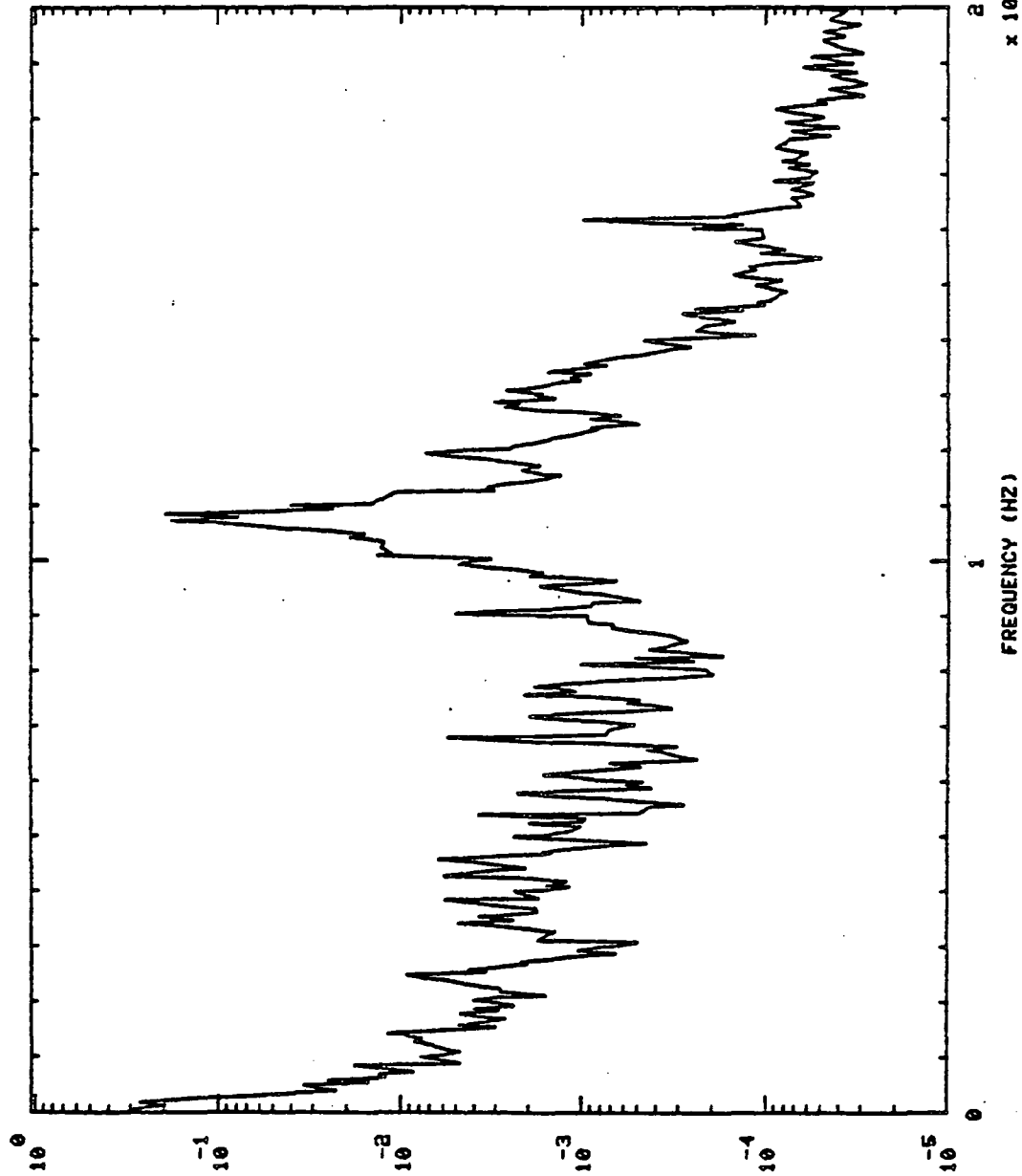
P S / HZ

C-3

S+ 45.01H0, 'S

FPB FUEL MAN PR

901307

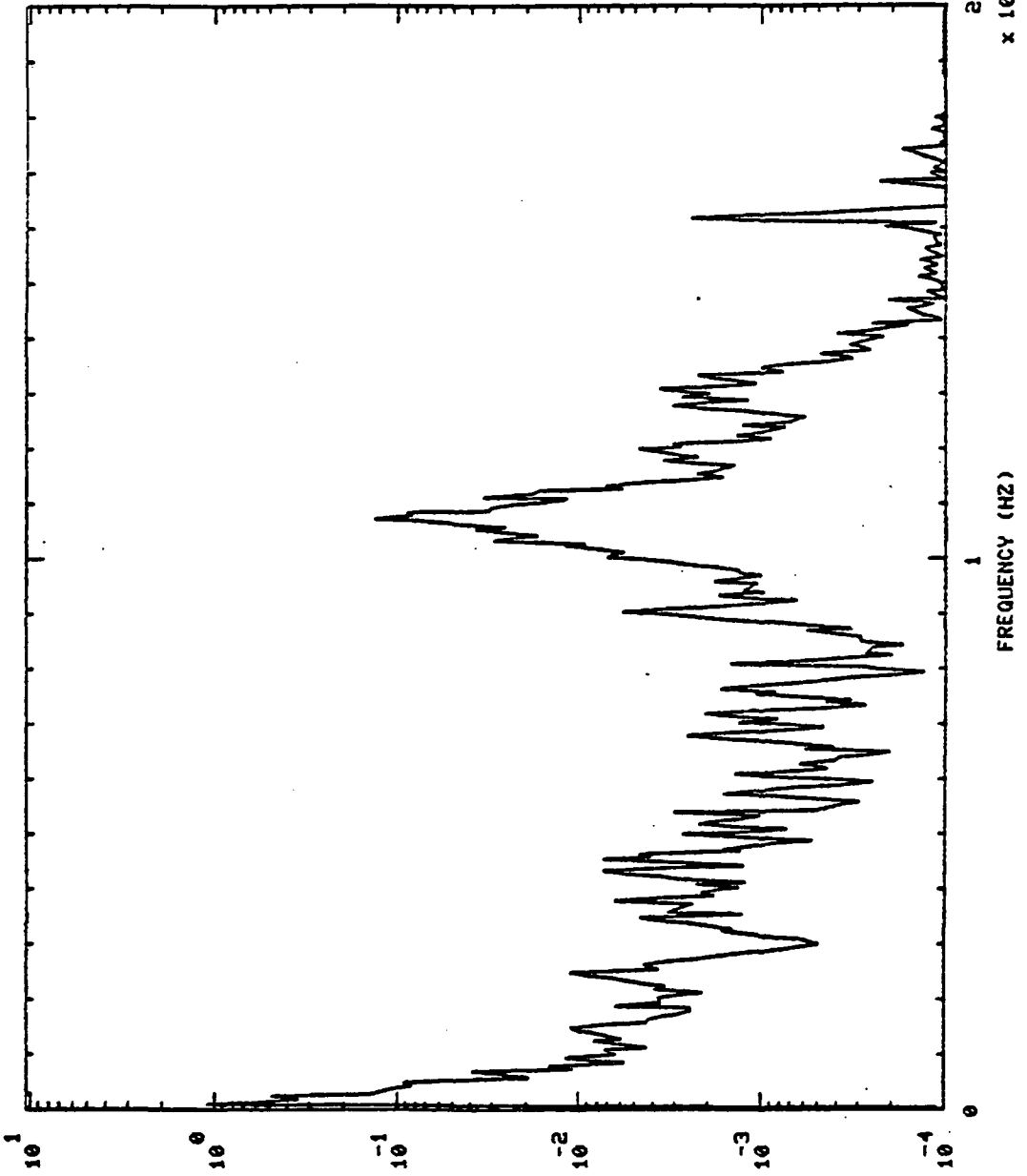


P S D IN

FREQUENCY (HZ)

x 10<sup>4</sup>

901307 FPB FUEL MAN PR S+ 70.01H0,'S



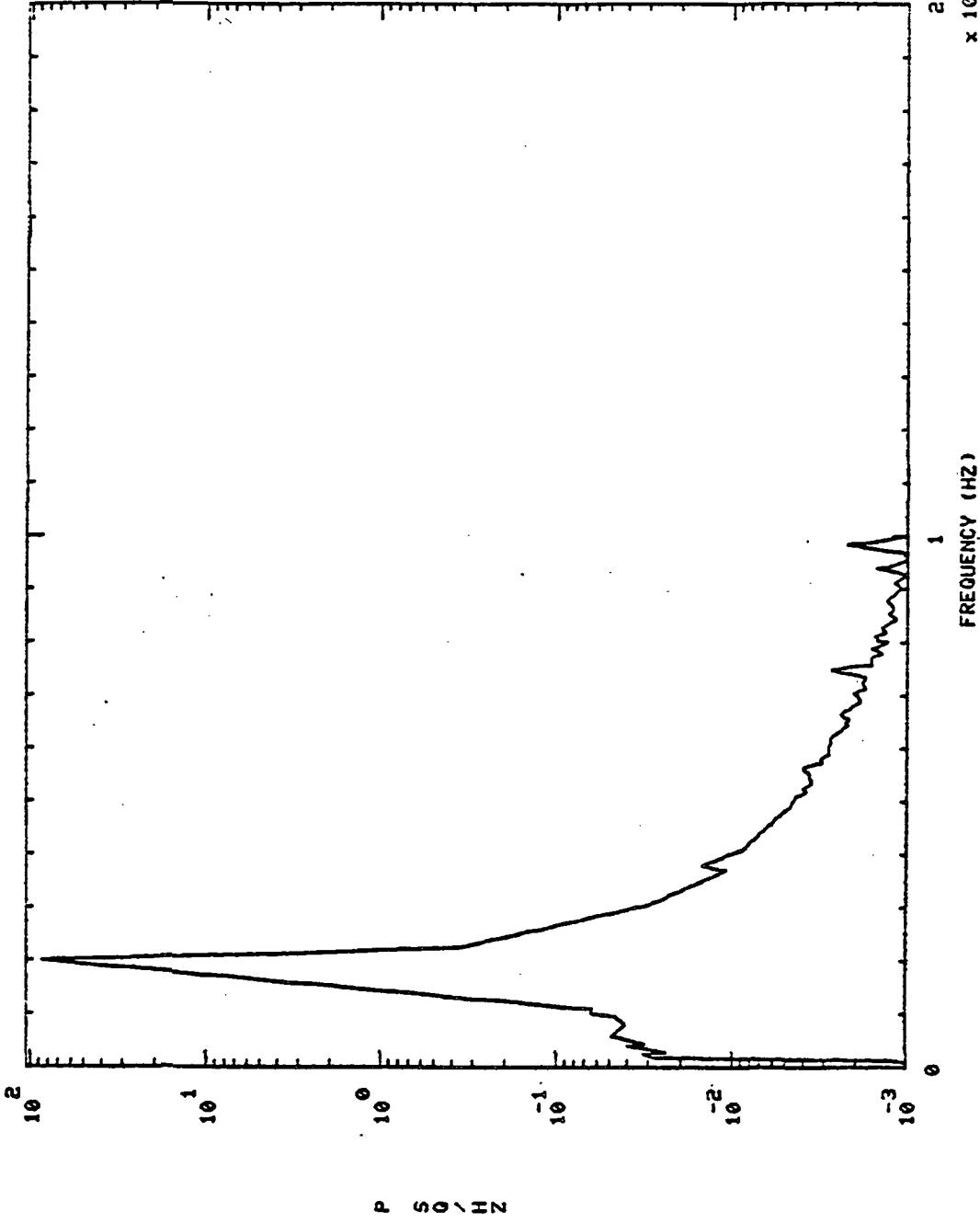
P SQ/HZ

24  
x 10

FREQUENCY (HZ)

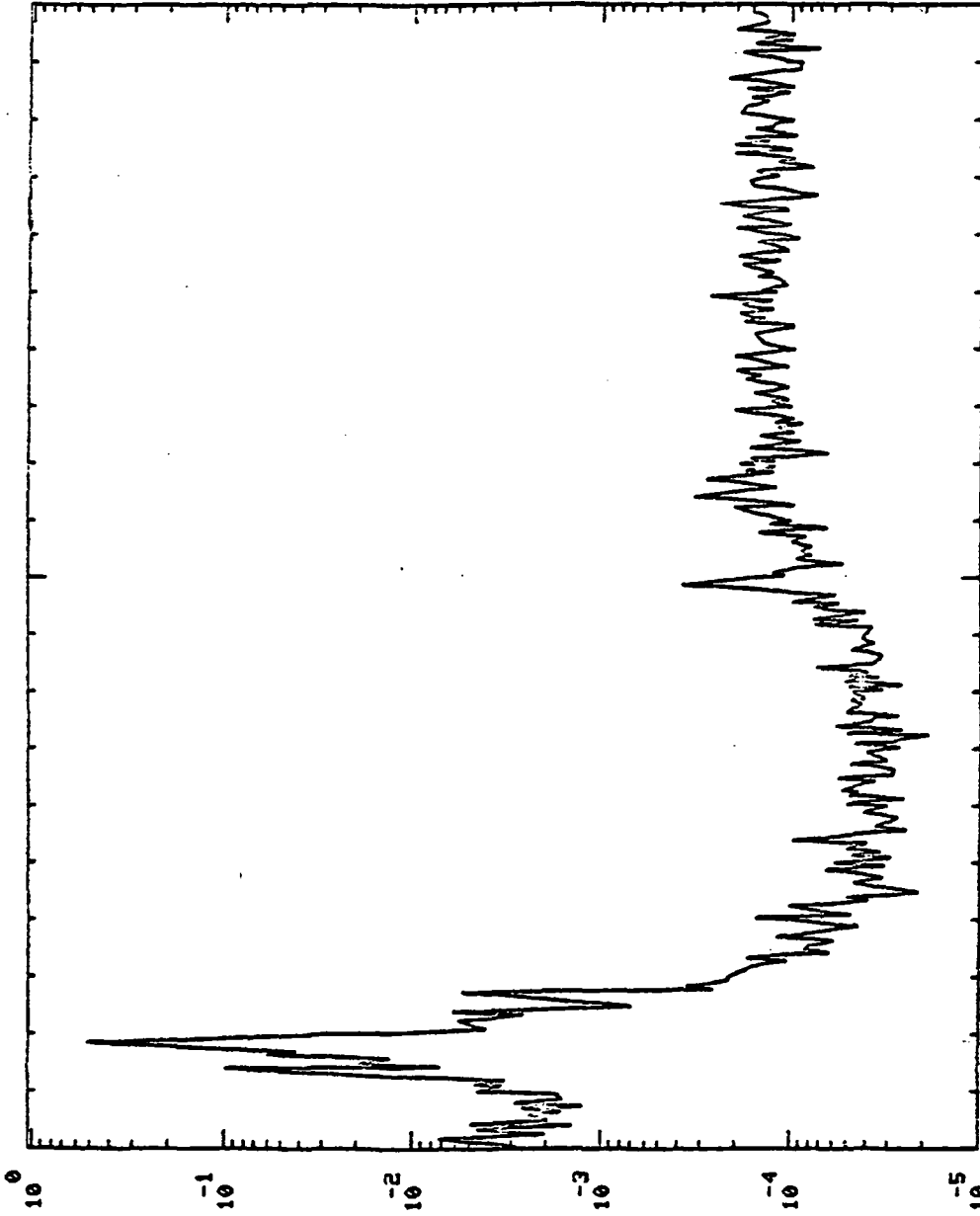
St 5.01H0,'S

901307 HPOP IN PR



501307 HPOP IN PR S+ 20.01H0,'S

501307 HPOP IN PR

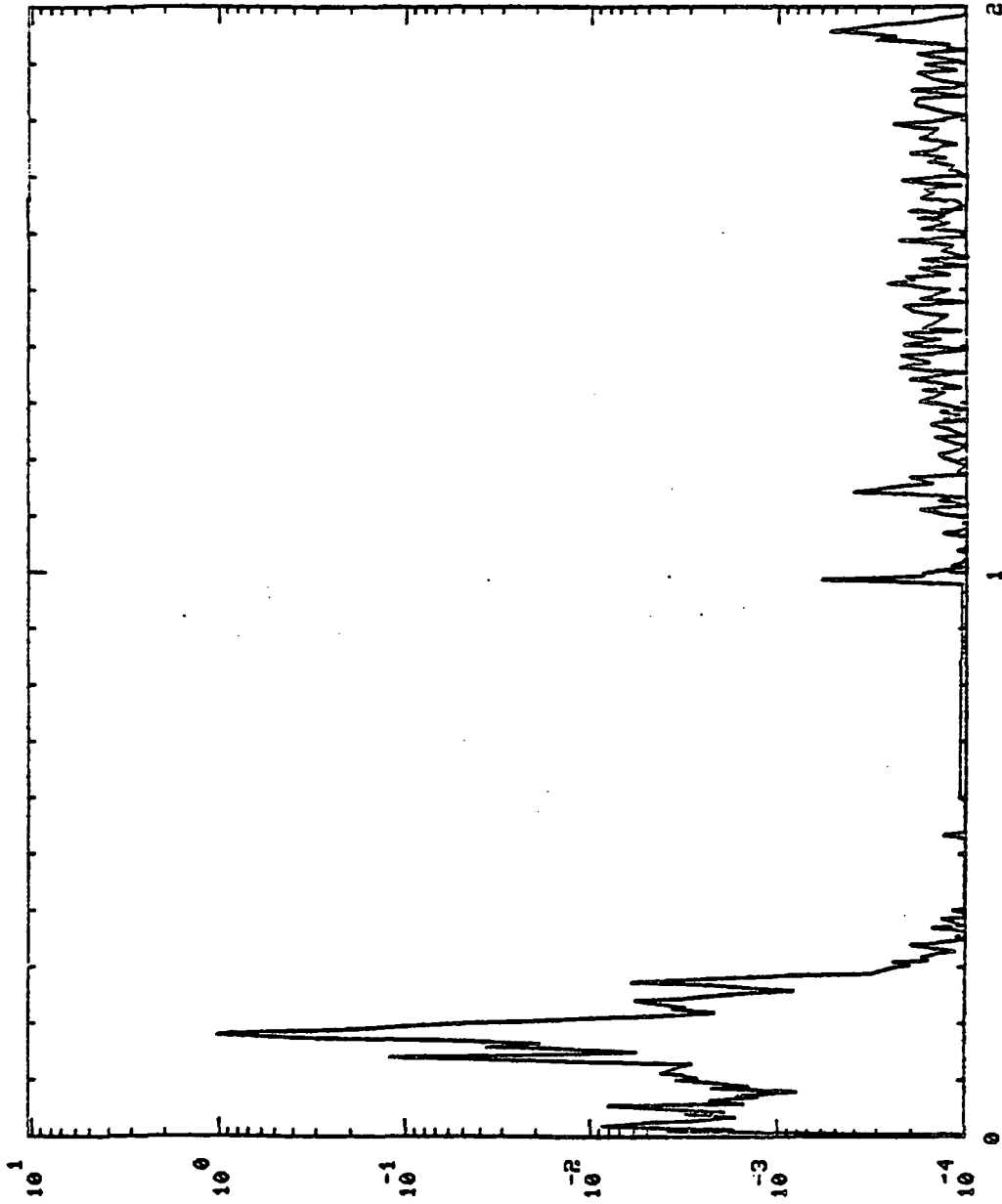


2<sup>4</sup>  
x 10

FREQUENCY (HZ)

P SQ \ HZ

901307 HPOP IN PR ST 45.01110,'S

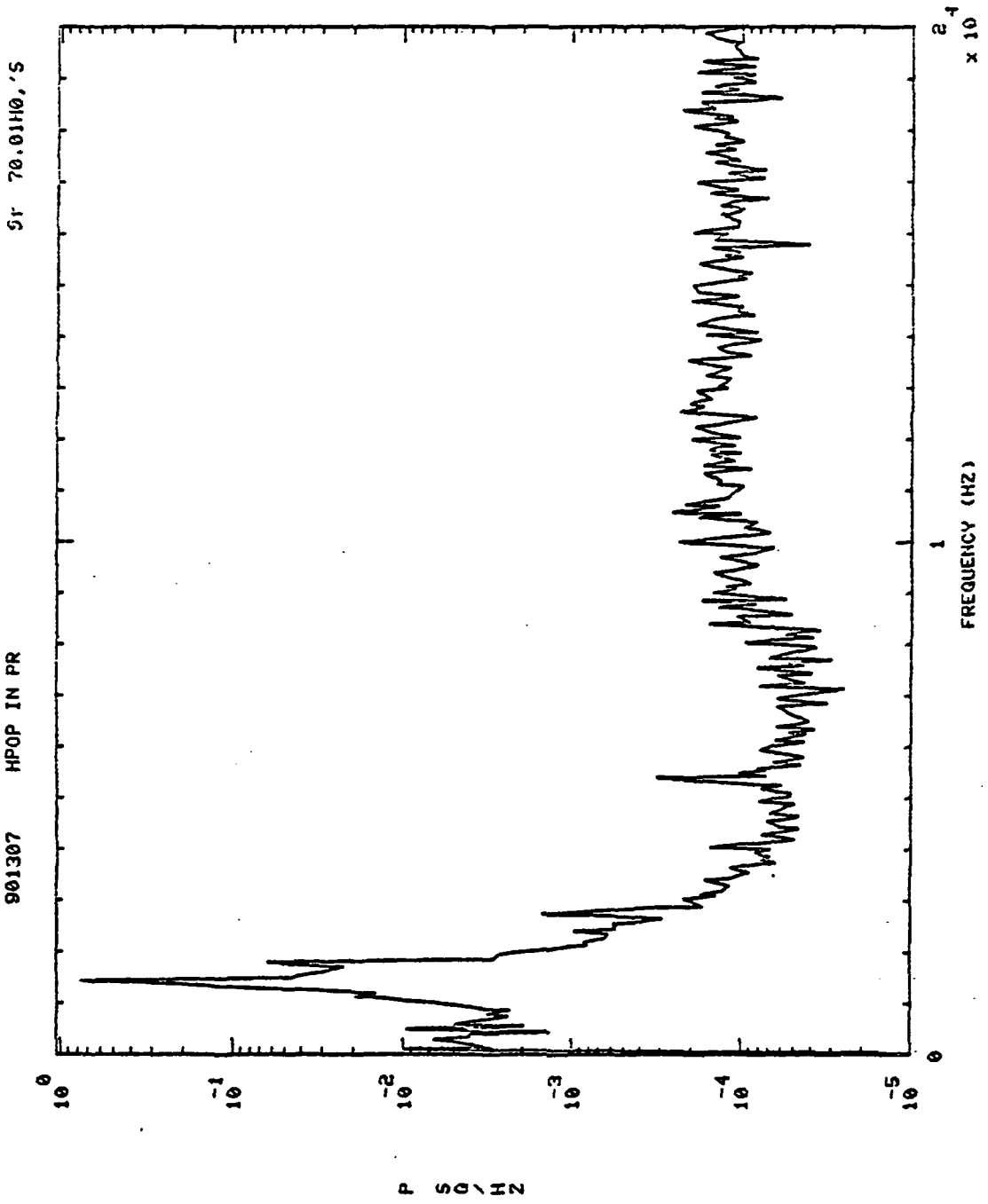


P 50 / HZ

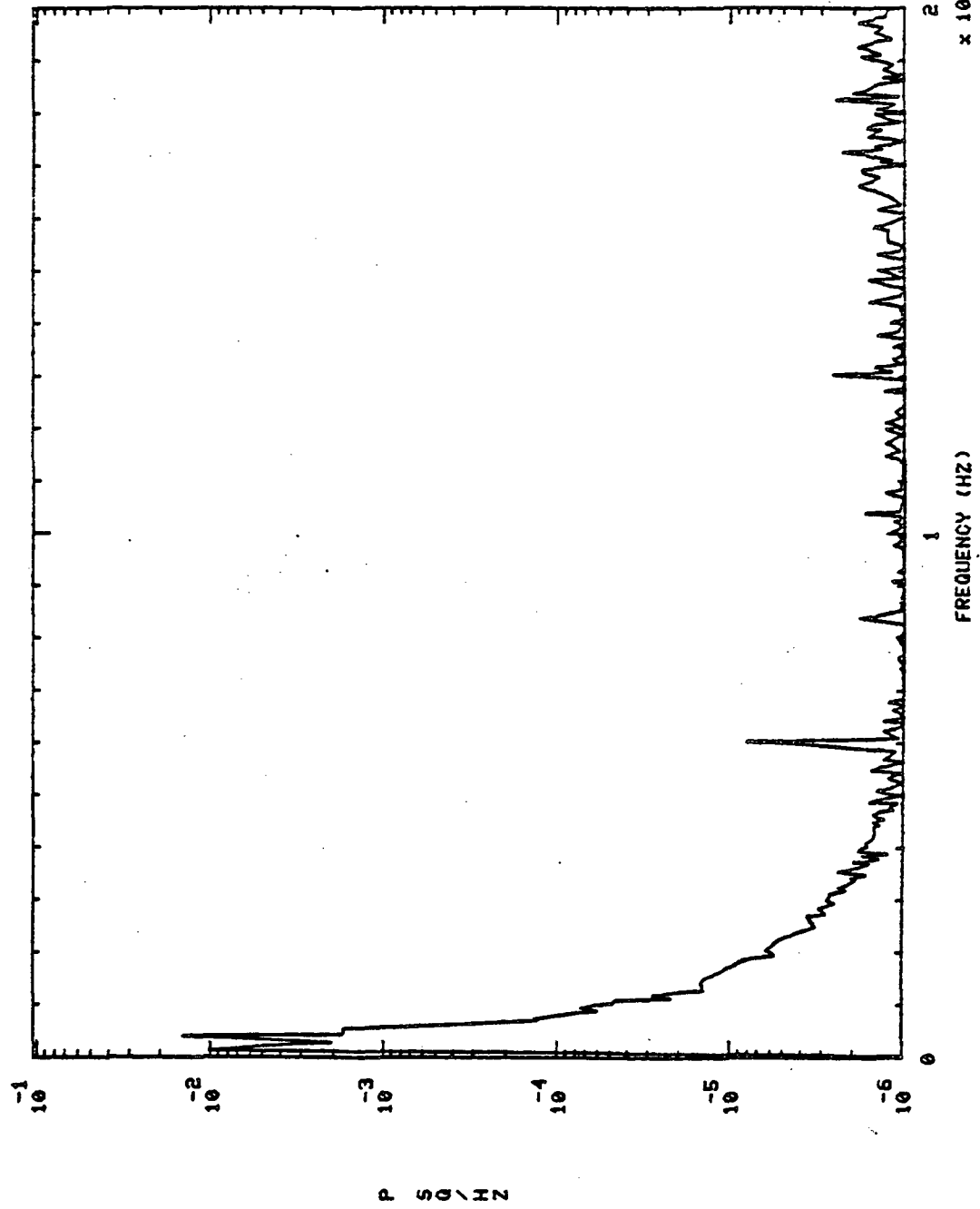


901307 HPOP IN PR 5r 70.0110,'S

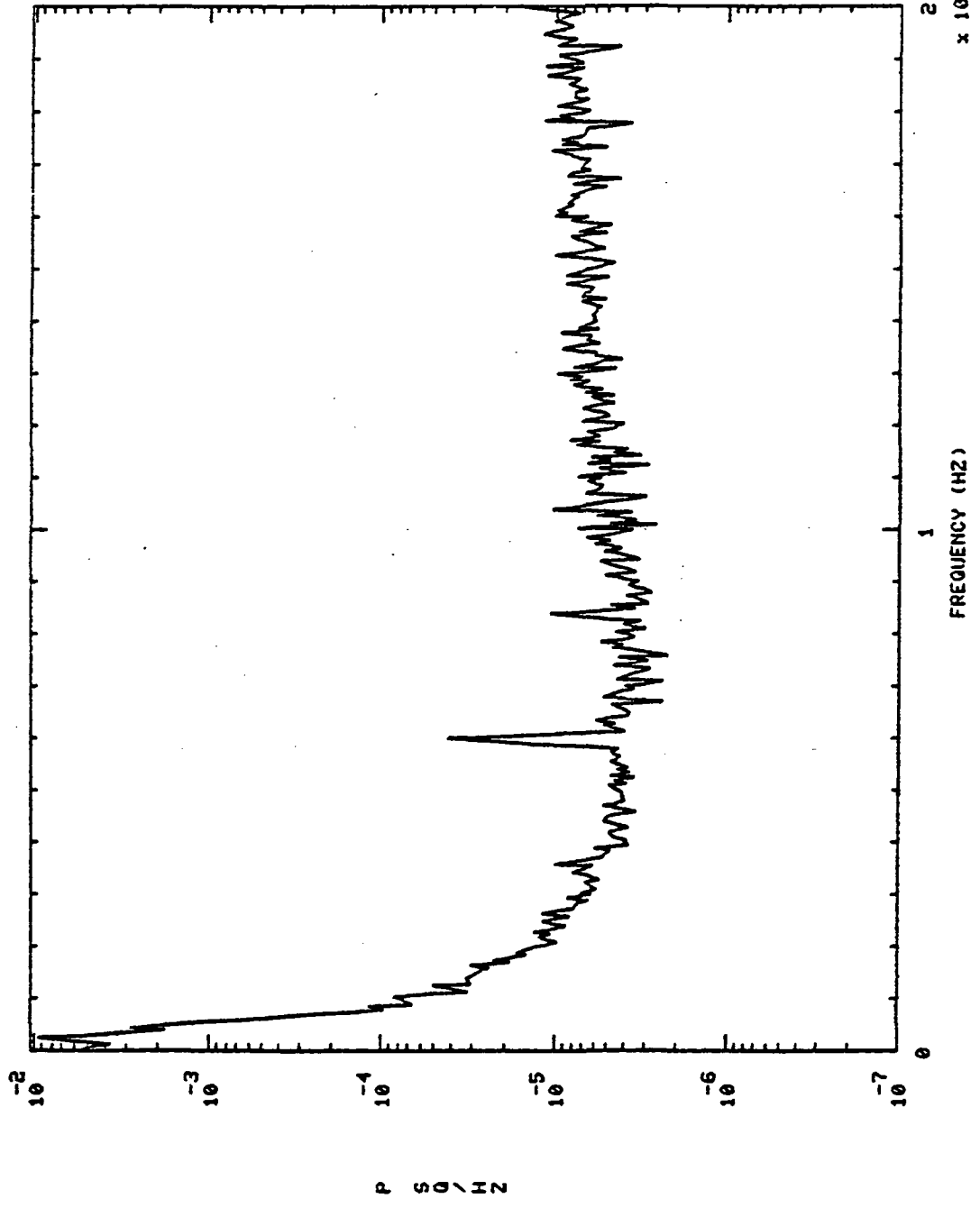
901307 HPOP IN PR



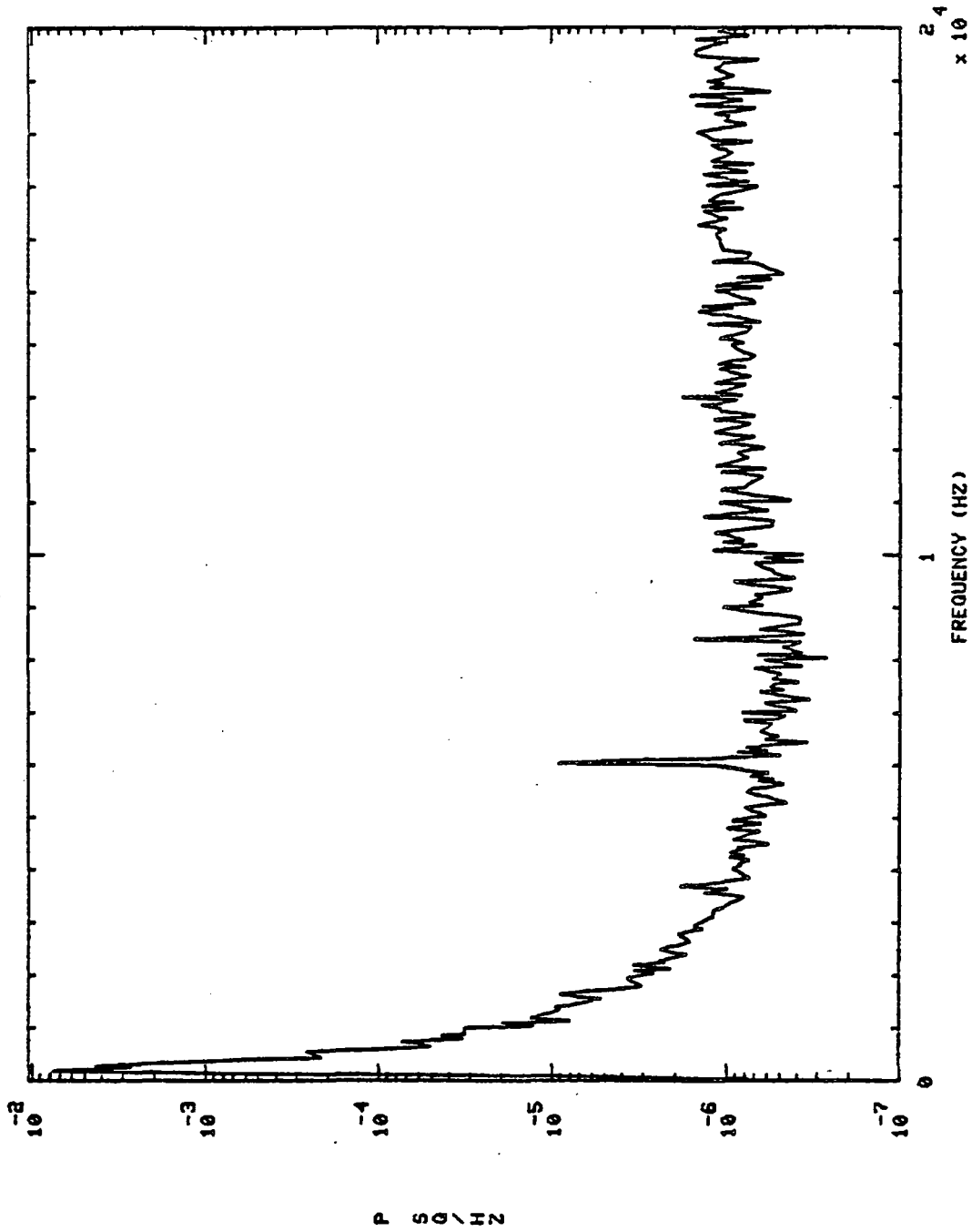
901307 HI LX I PR S+ 5.01H0,'S



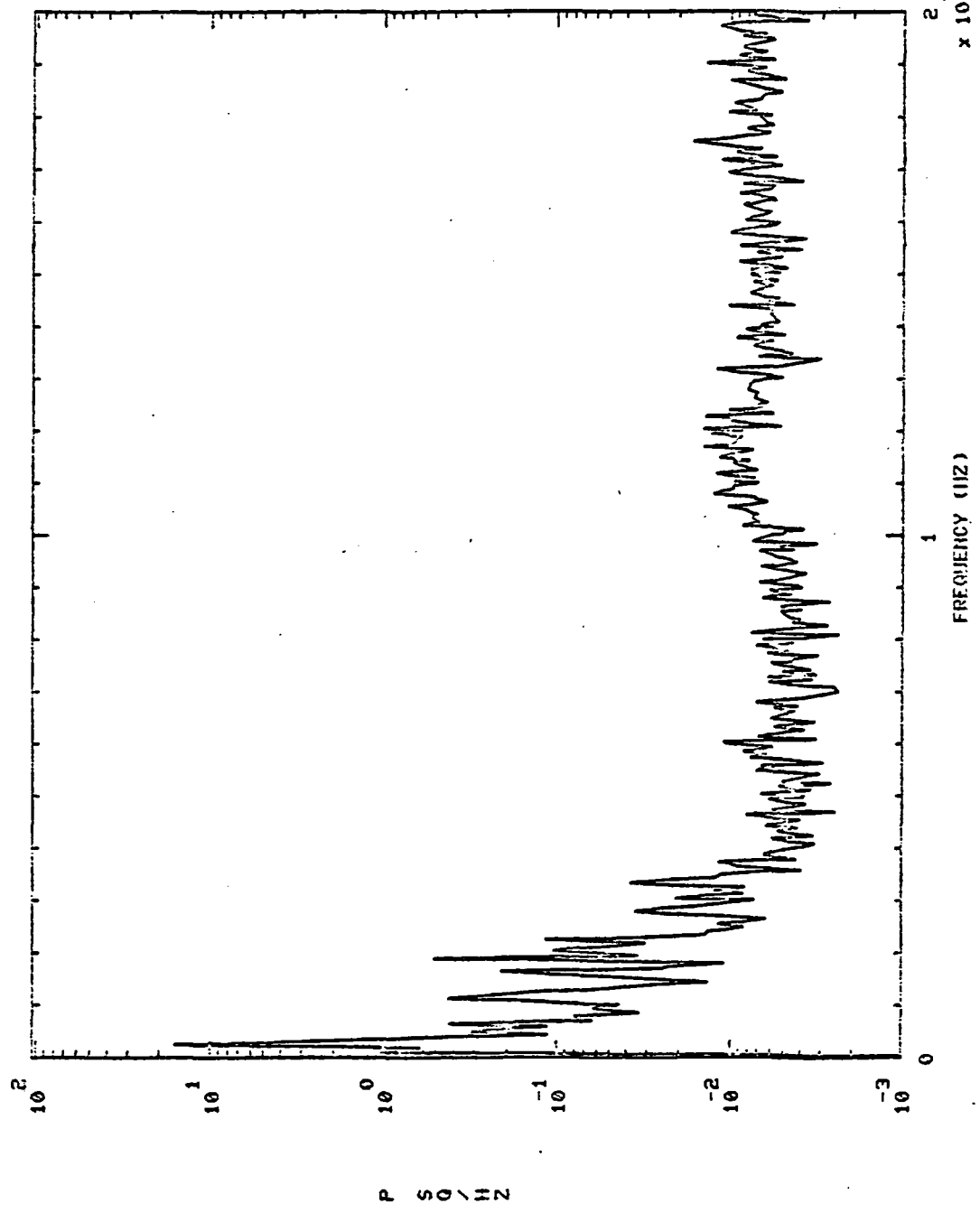
901307 HI LX I PR S+ 20.01H0,'S



901307 HI LX I PR S+ 70.01HG, 'S

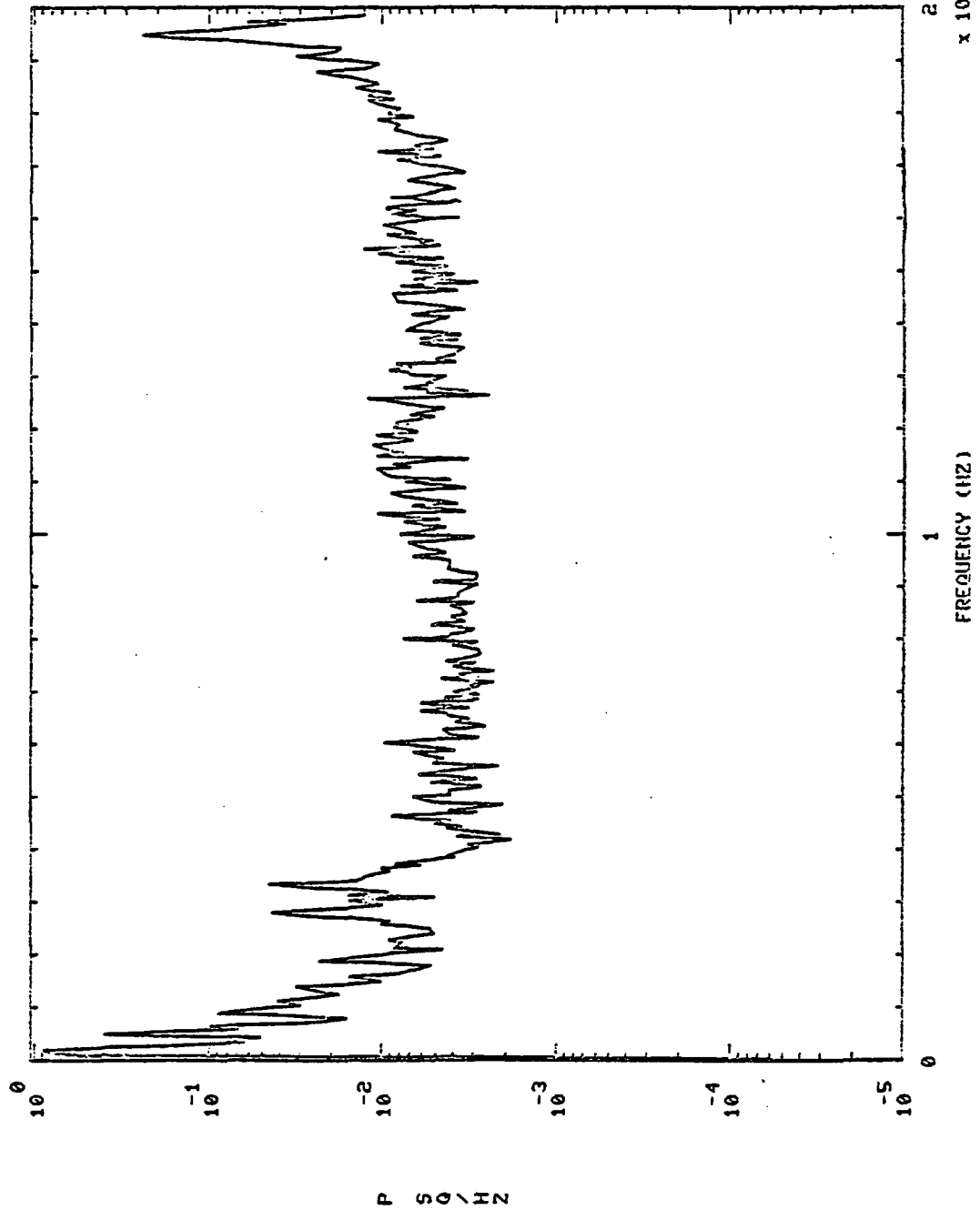


901309 HPOP DS PR St 6.01H0.'S

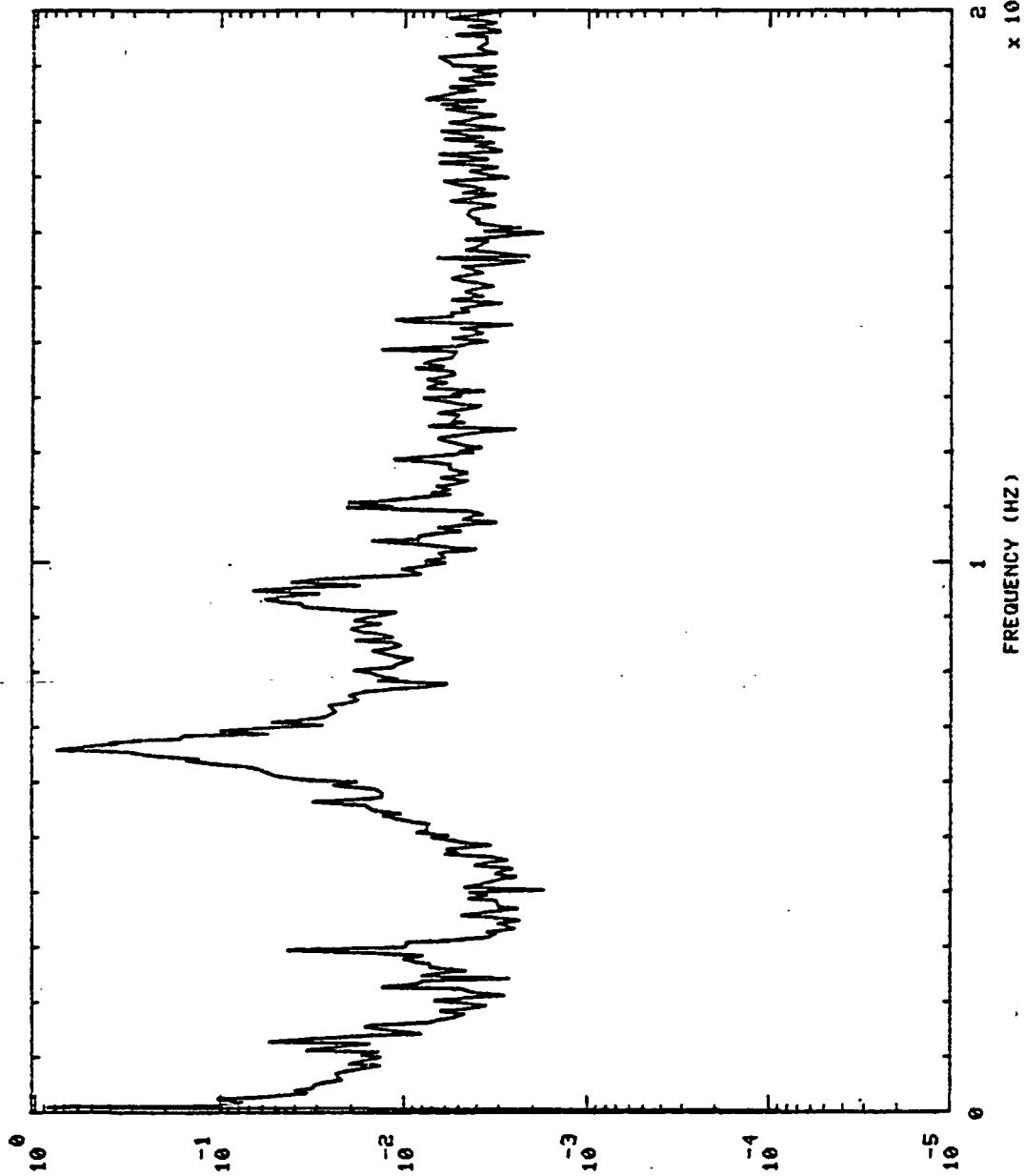


St 30.01H0, 'S

901309 HPOP DS PR

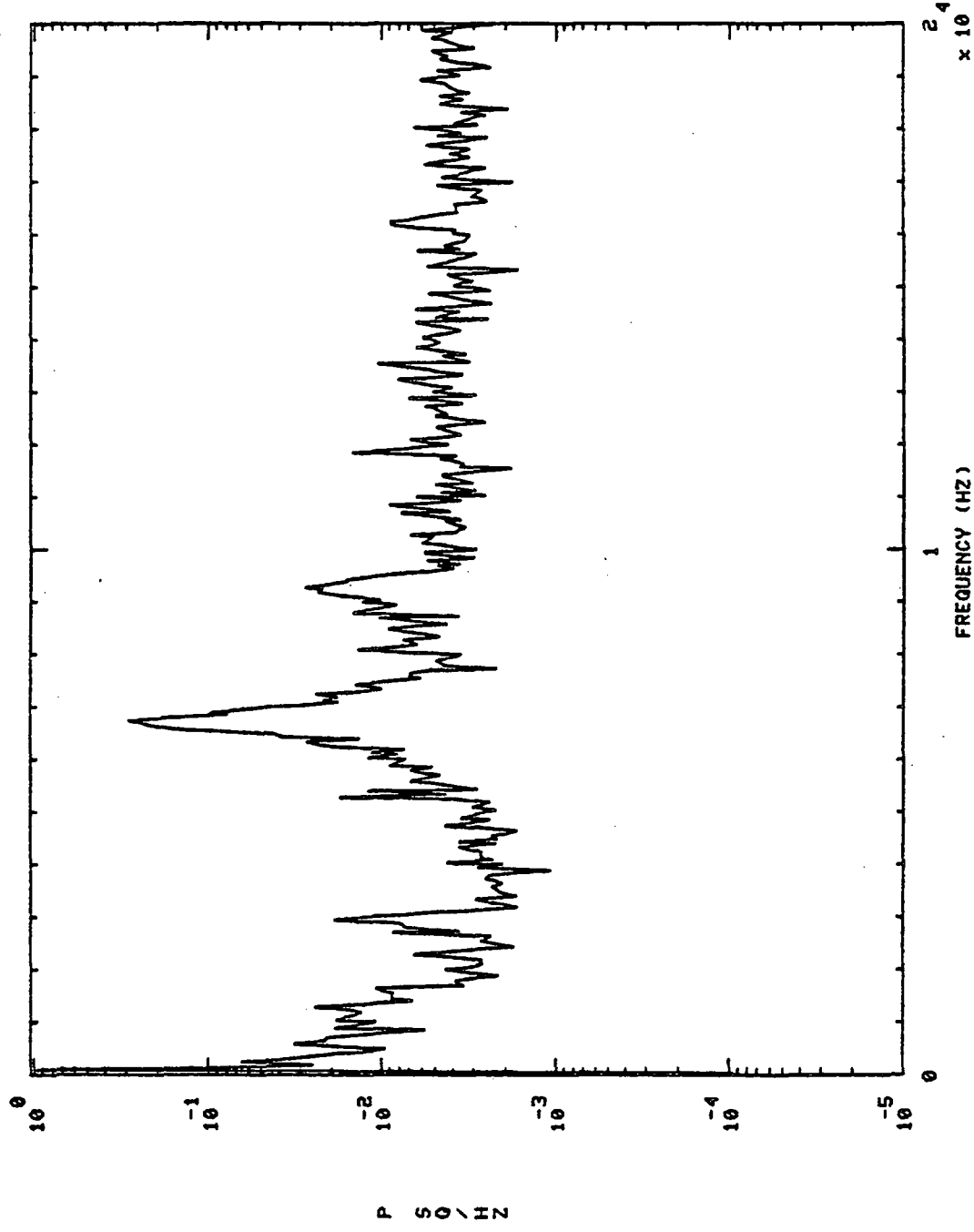


901309 MCC HOT GAS IN PR S+ 6.01H0,'S



P SQ / HZ

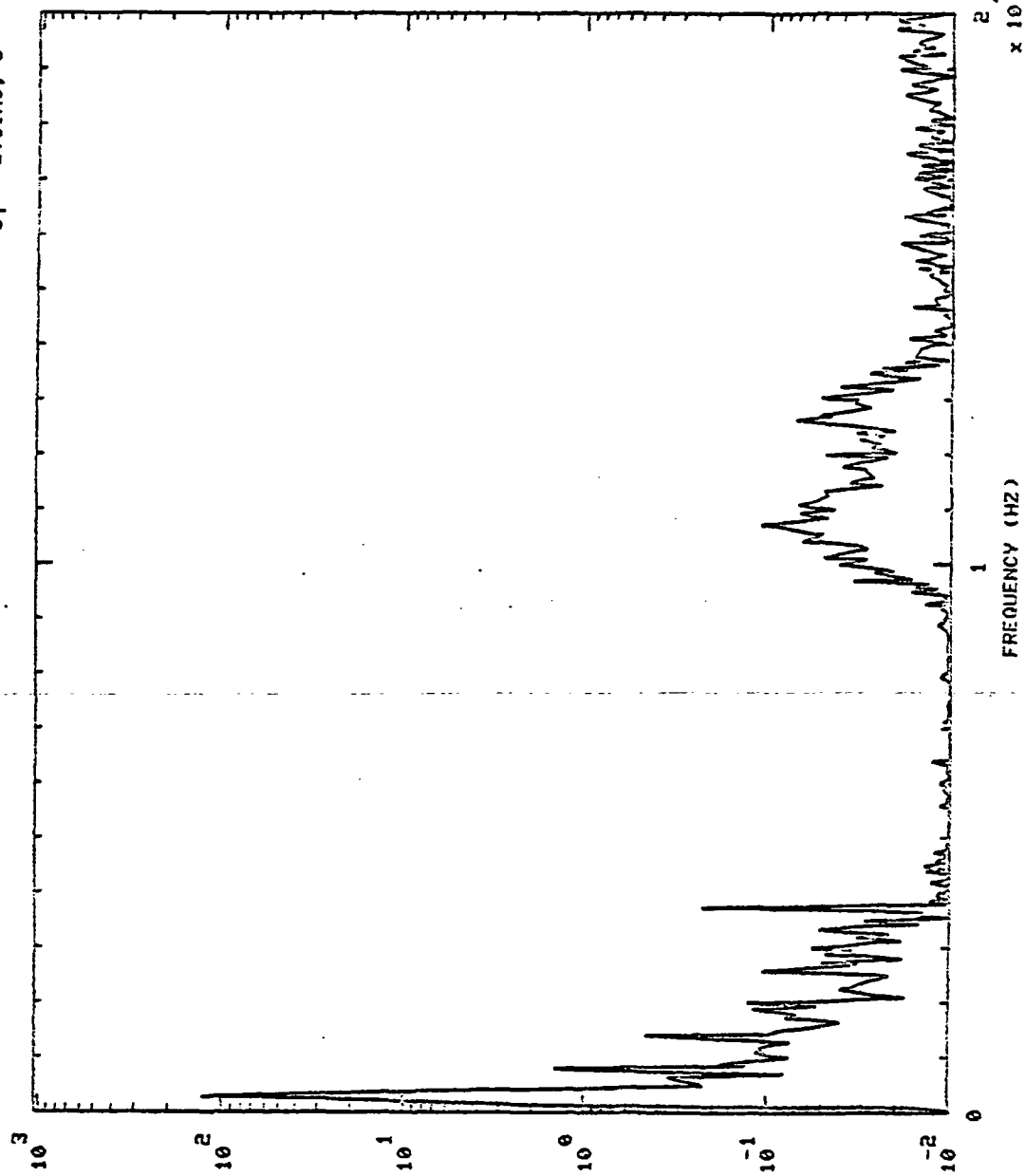
901309 MCC HOT GAS IN PR S+ 24.01H0, 'S





St 6.01H0,'S

901309 PBP DS PR



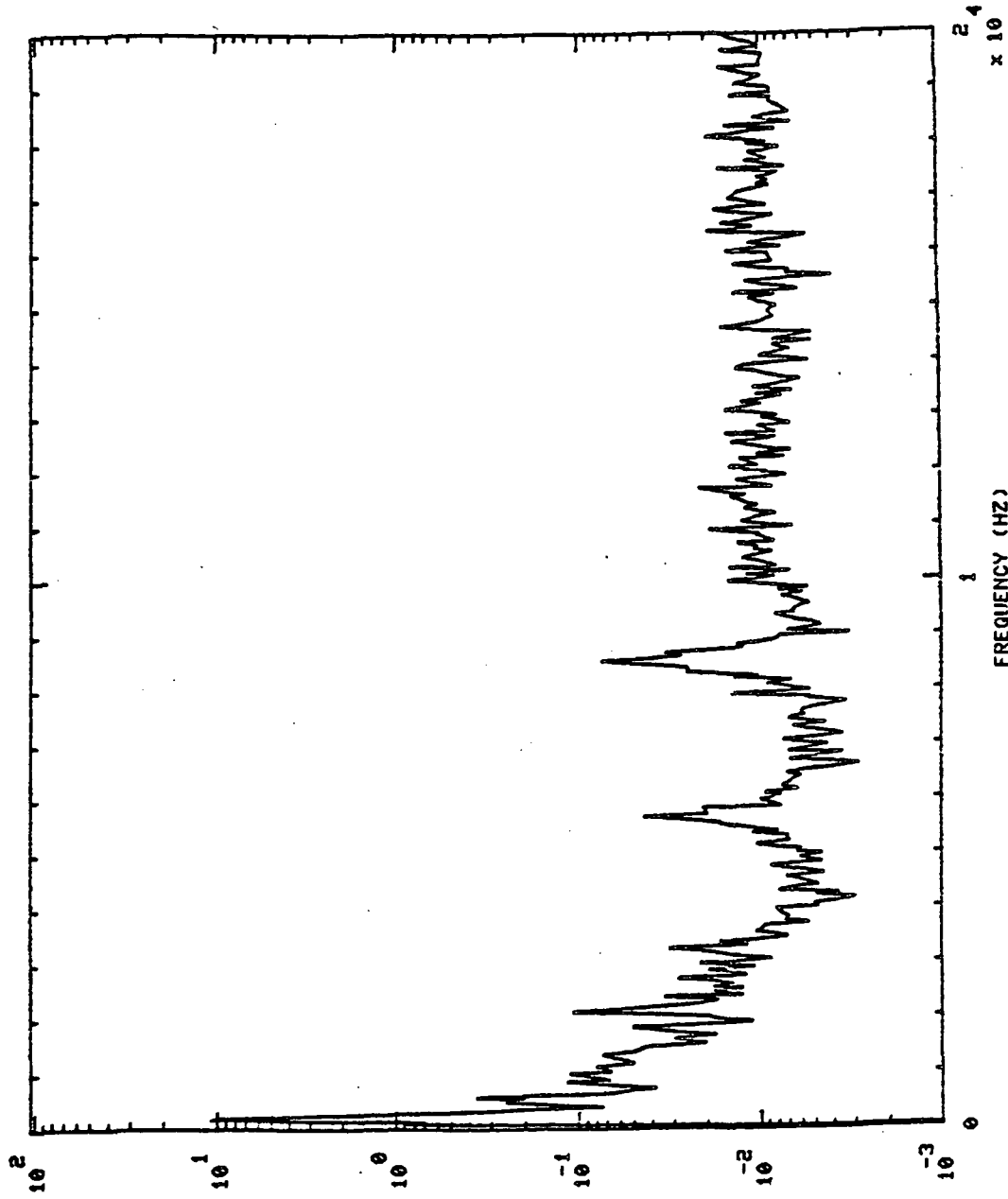
P S / HZ

FREQUENCY (HZ)

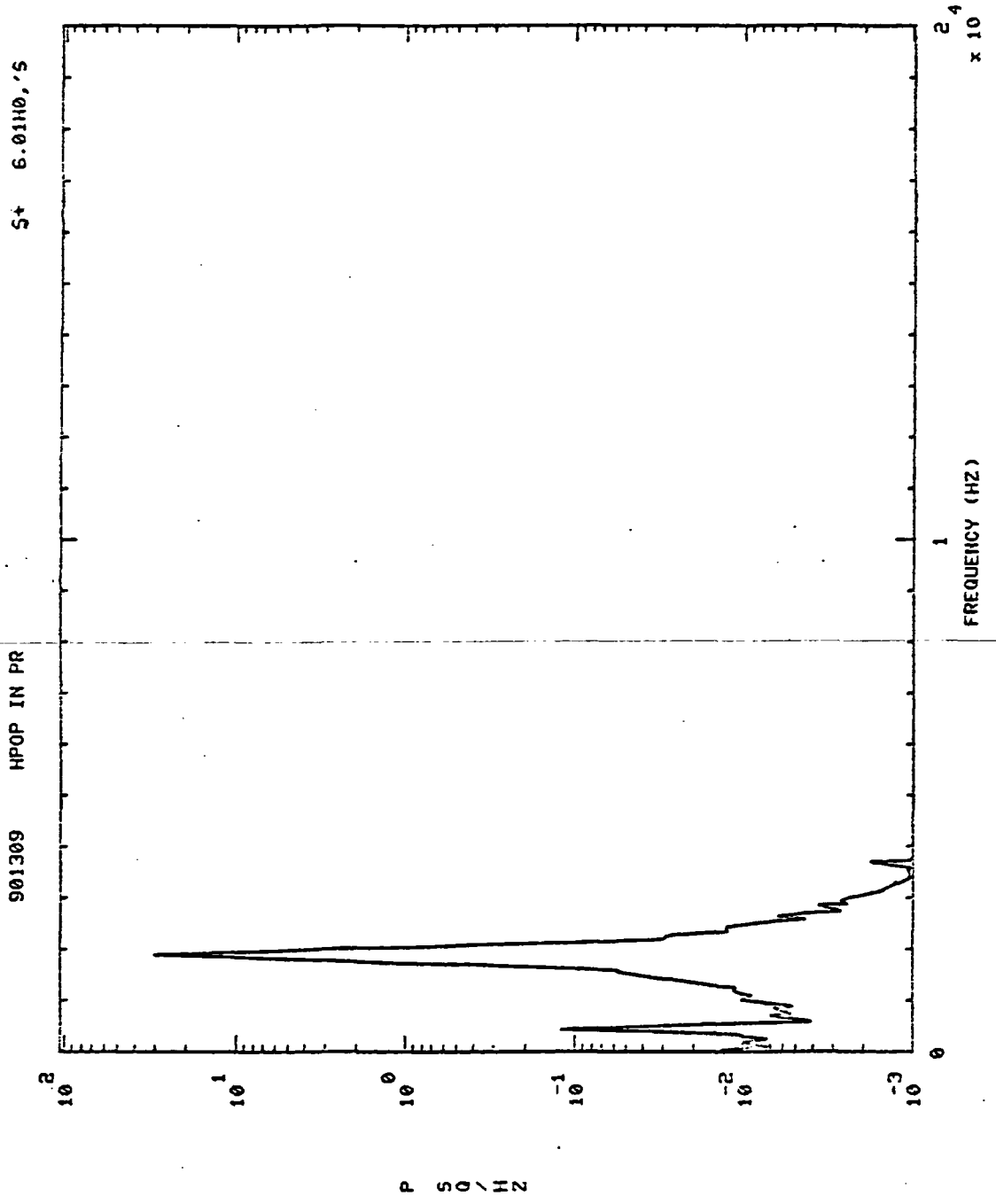
$10^4$   
x  $10^4$

S+ 30.0

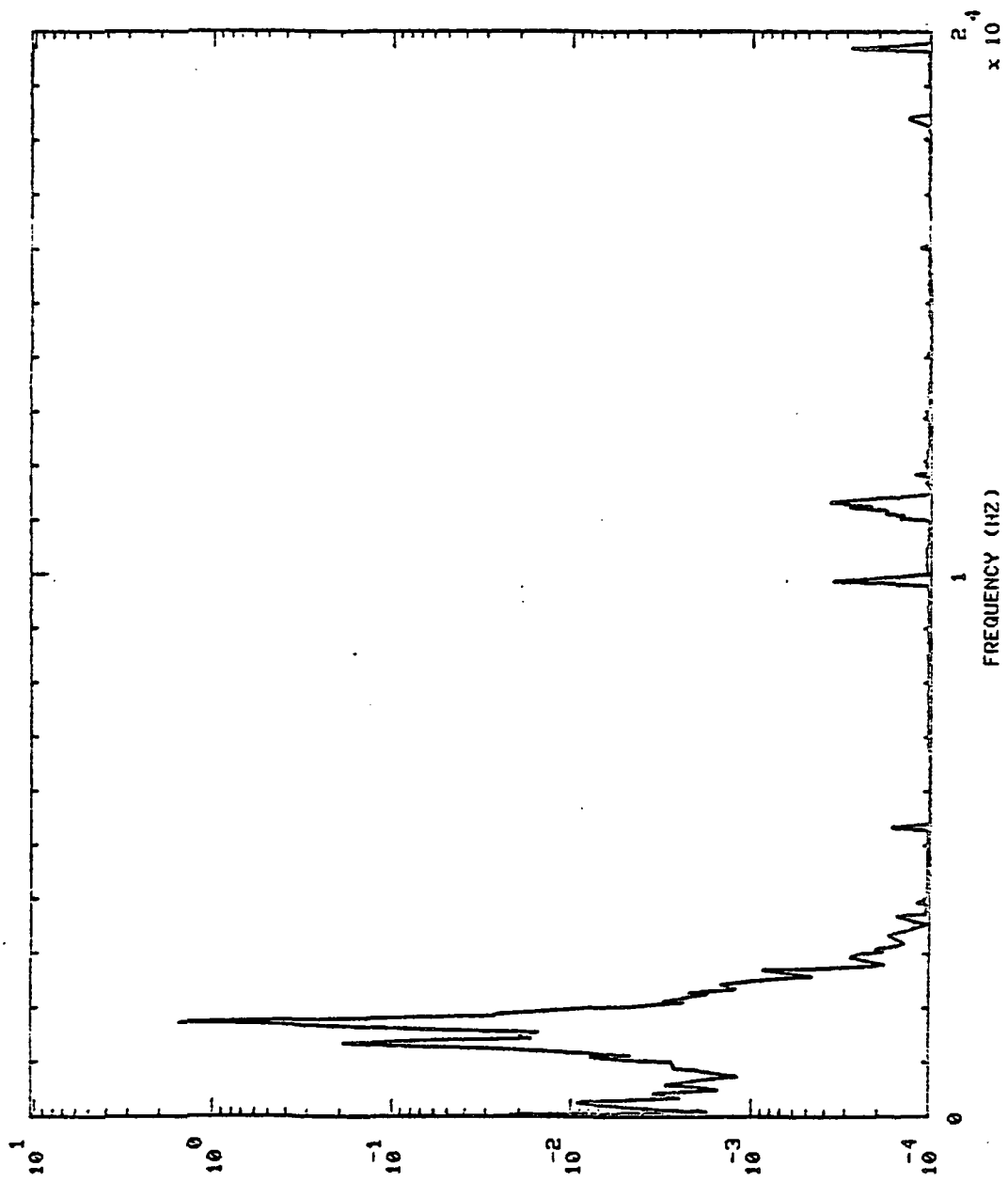
901309 PBP DS PR



P 50 \ H Z

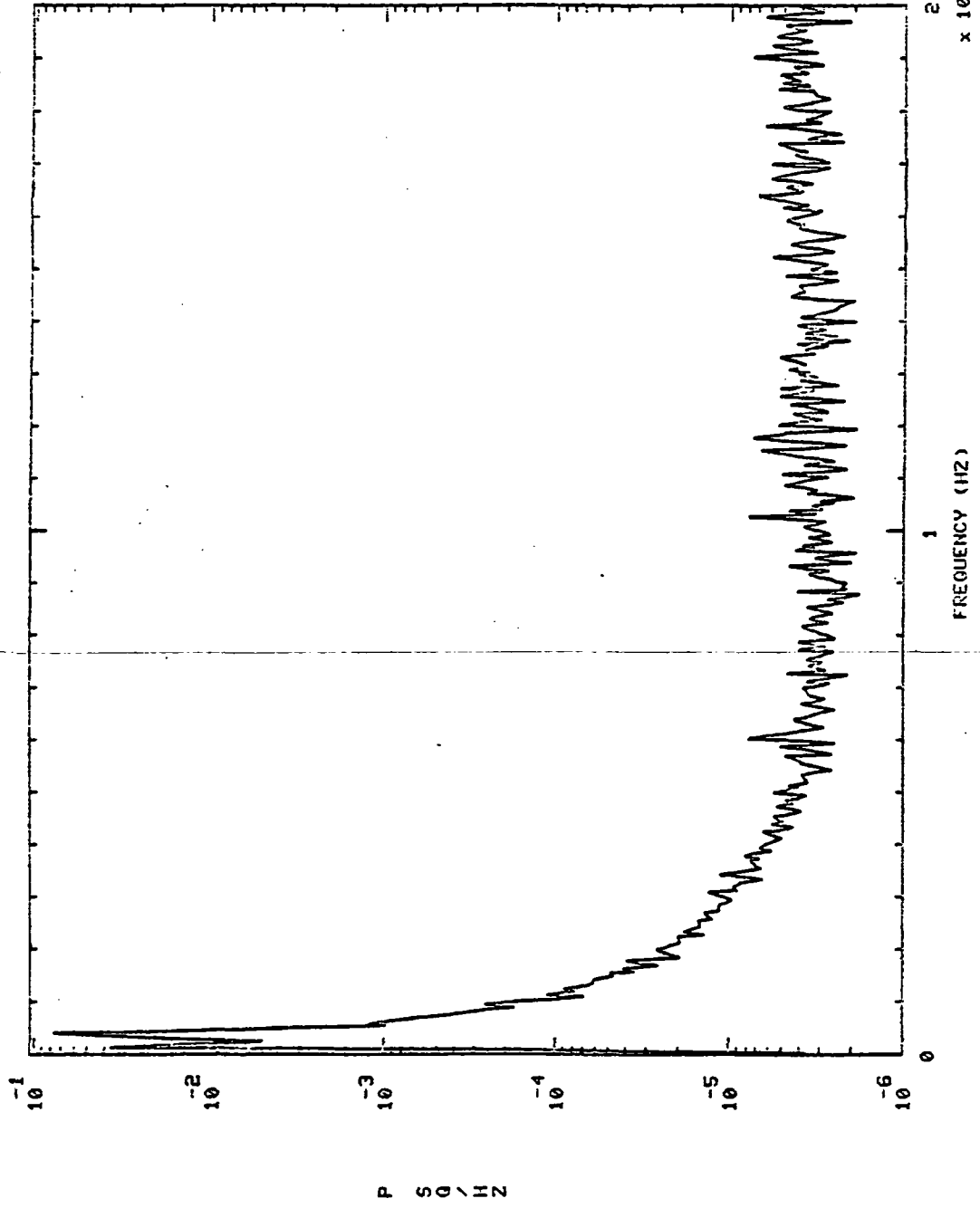


901309 HPOP IN PR ST 24.01H0,'S

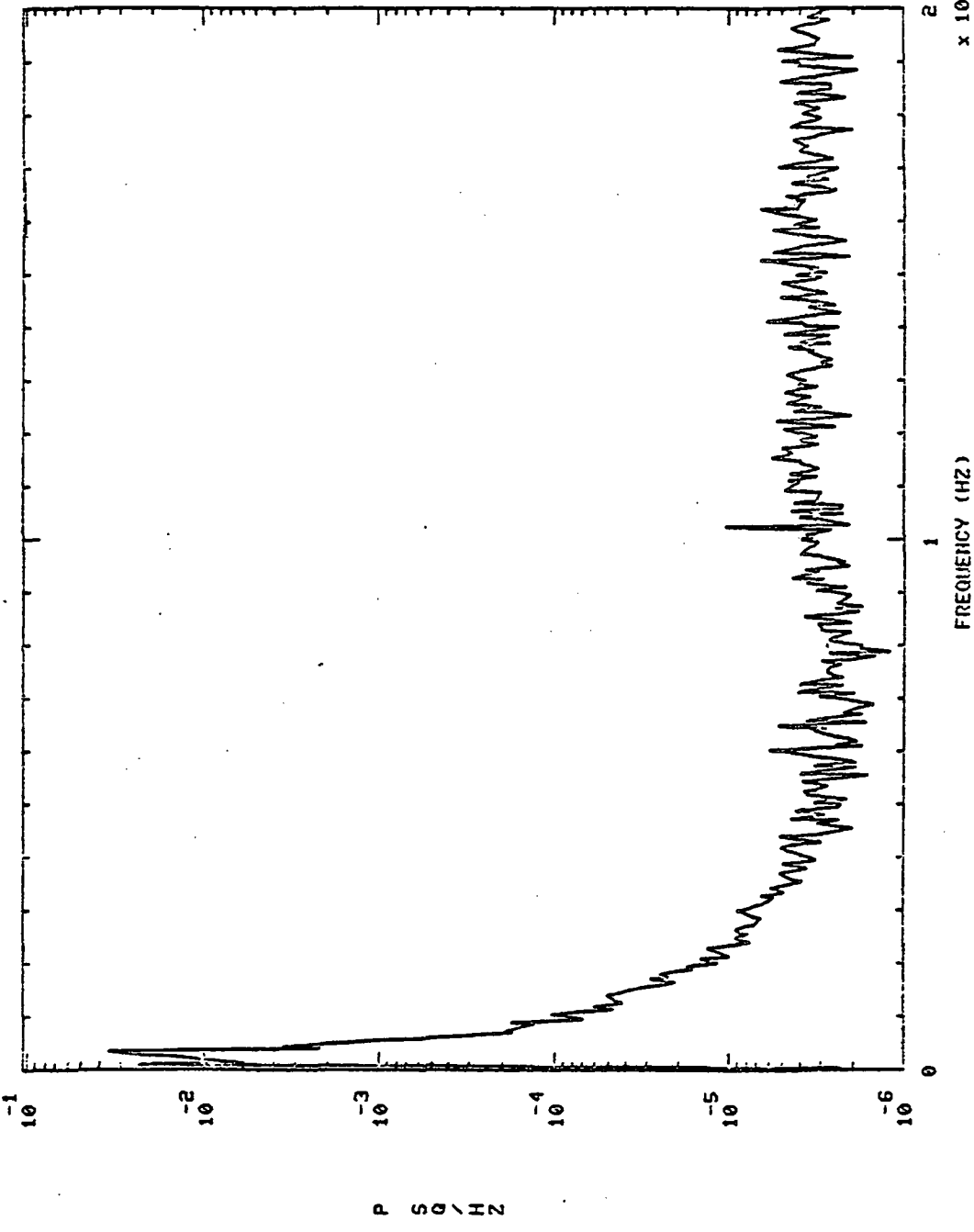


P.  $g^2/Hz$

901309 HI LX I PR St 6.01H0,'S

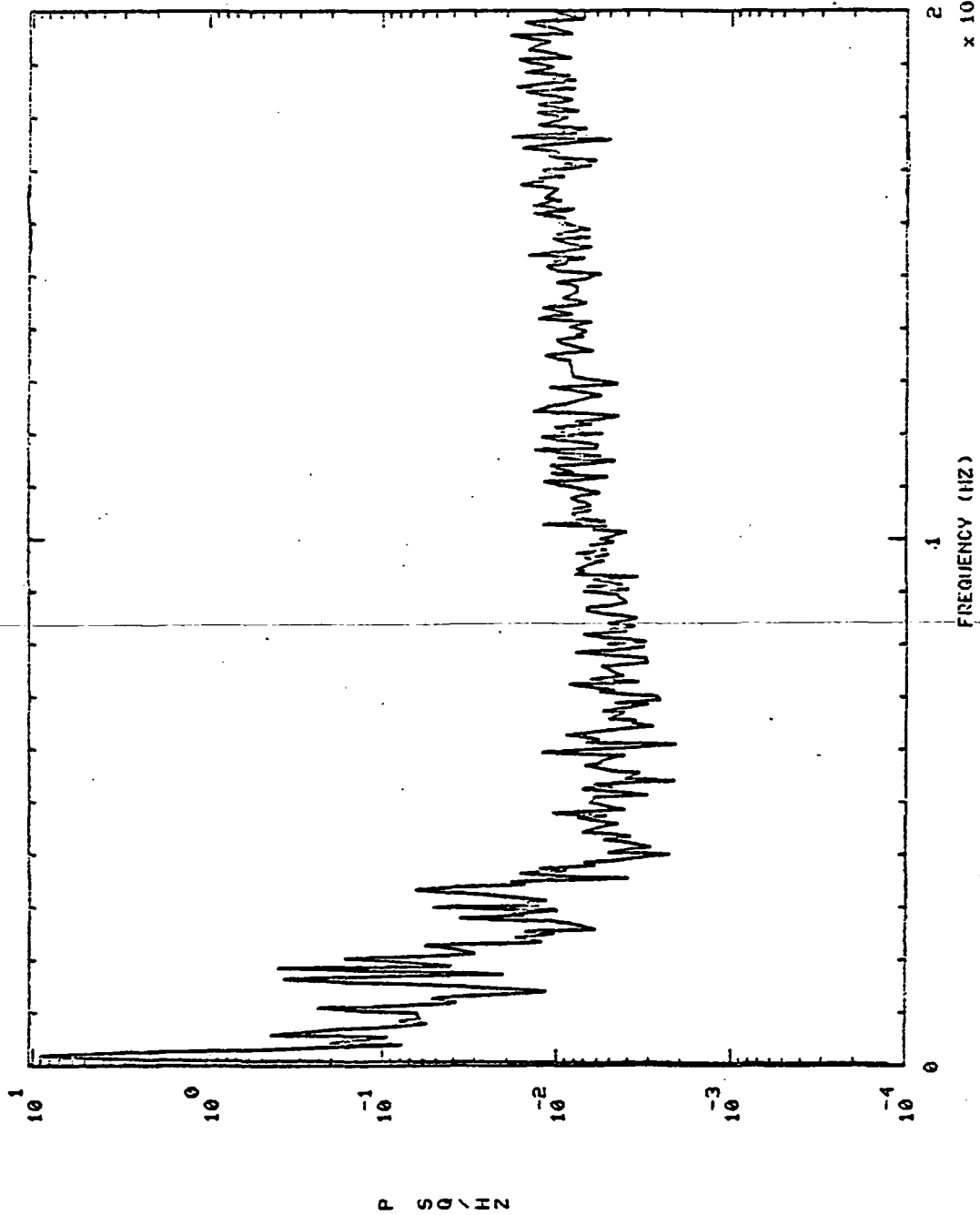


901309 HI LX I PR ST 24.01H0,'S

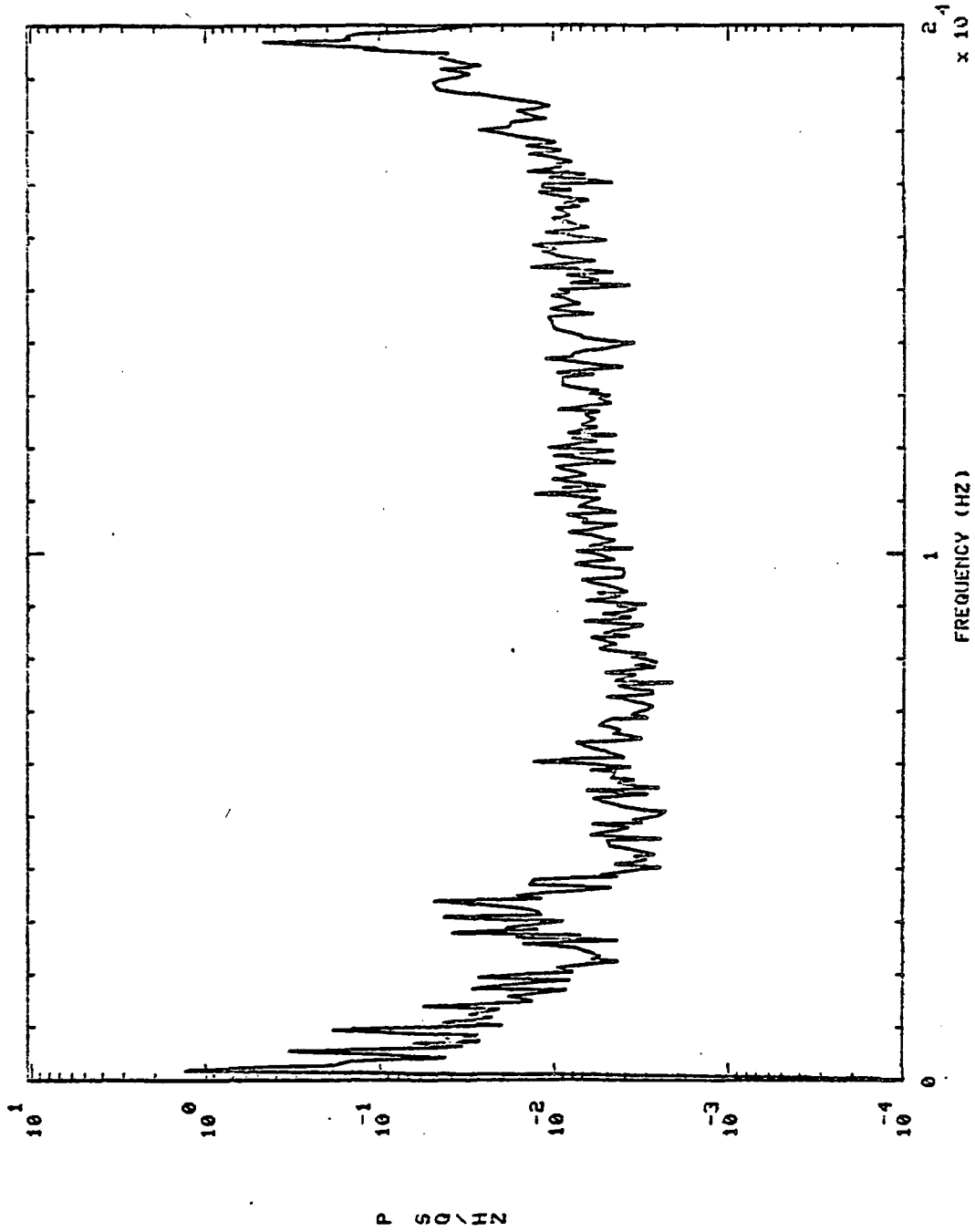


ST 6.01110,'S

901310 HPOP DS PR



901310 HPOP DS PR ST 30.01H0,'S

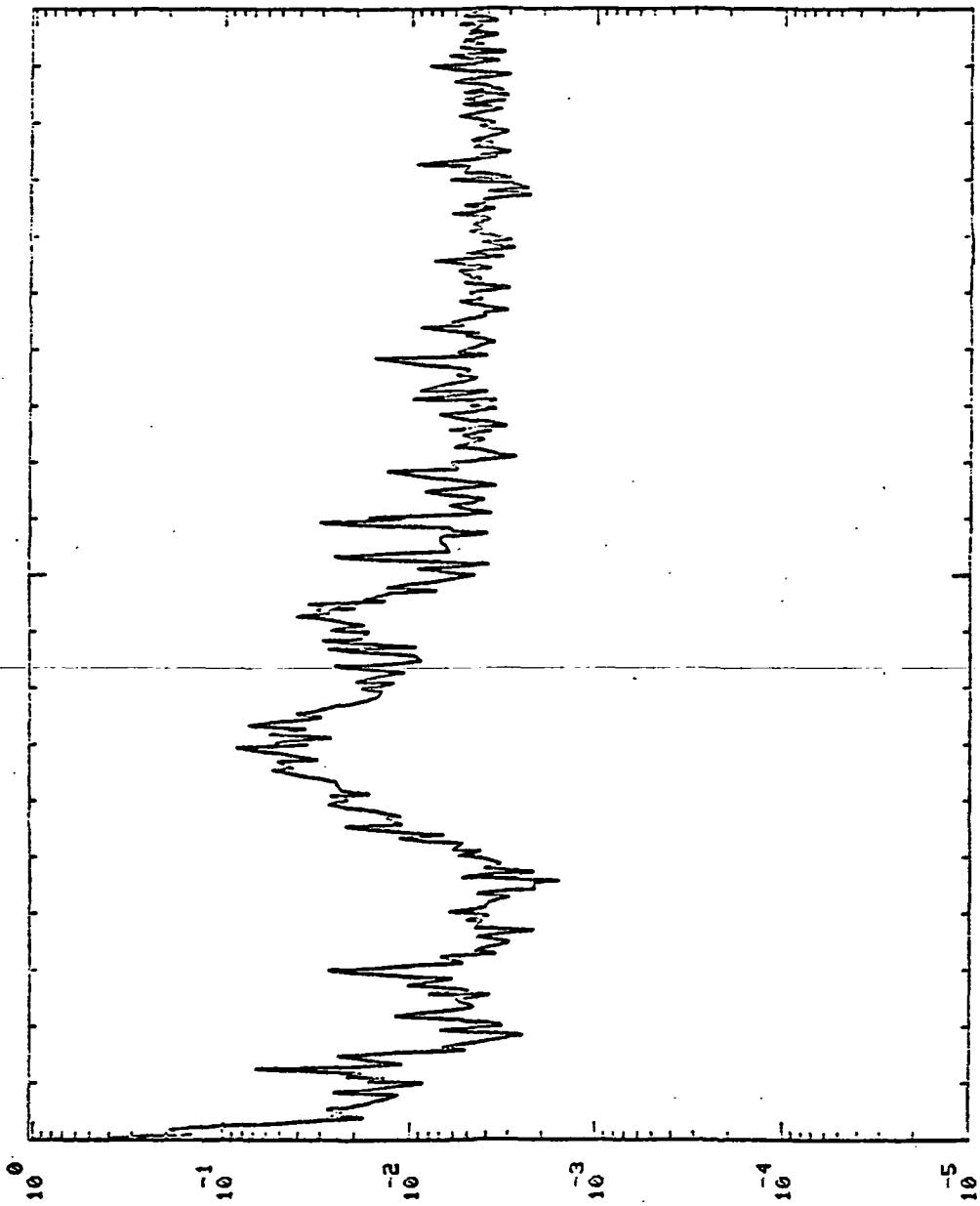


$10^1$   
 $\times 10^4$

1  
FREQUENCY (HZ)



901310 MCC HOT GAS IN PR ST 6.01H0,'S

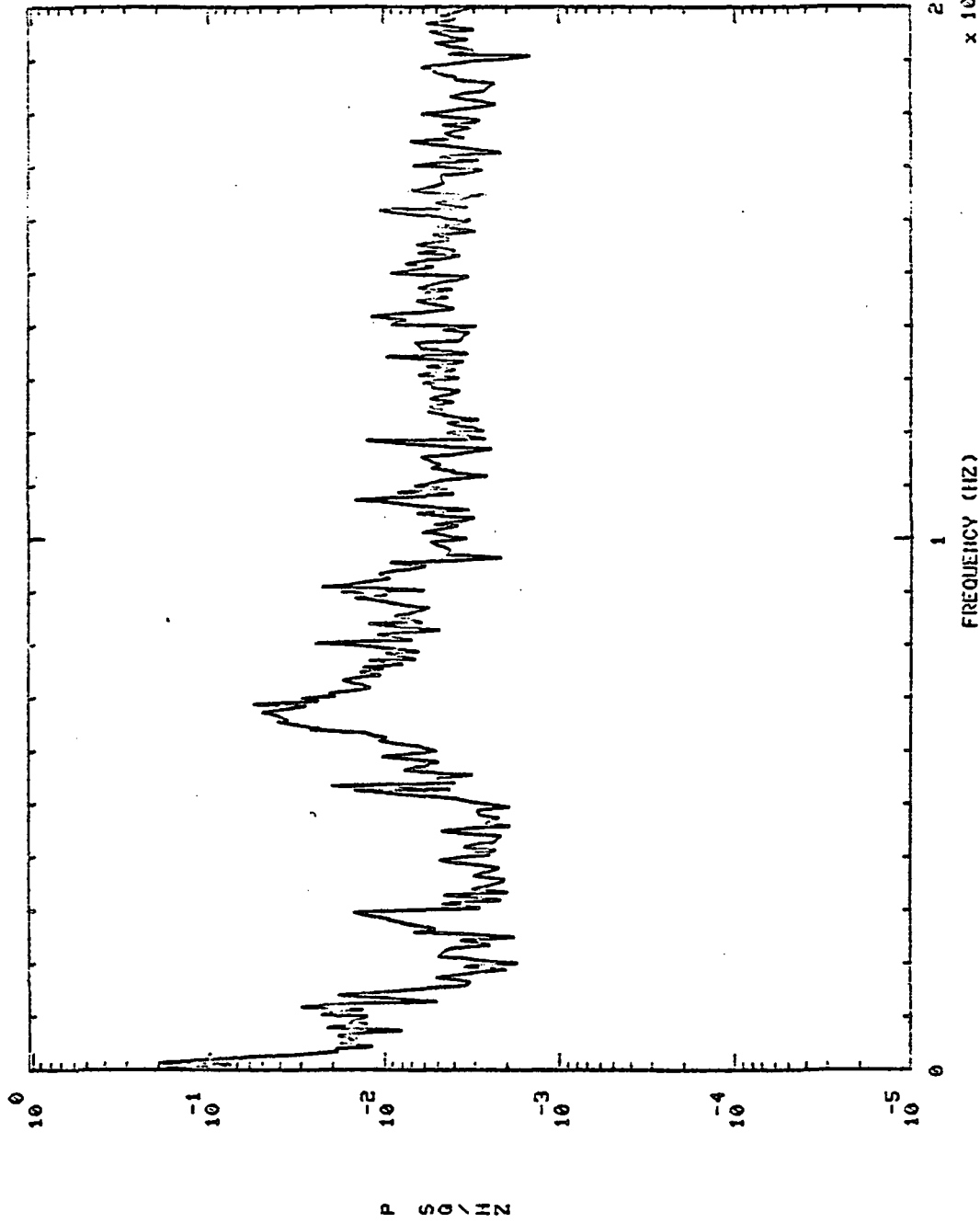


P S D / H Z

1  
FREQUENCY (HZ)  
2 4  
x 10<sup>4</sup>

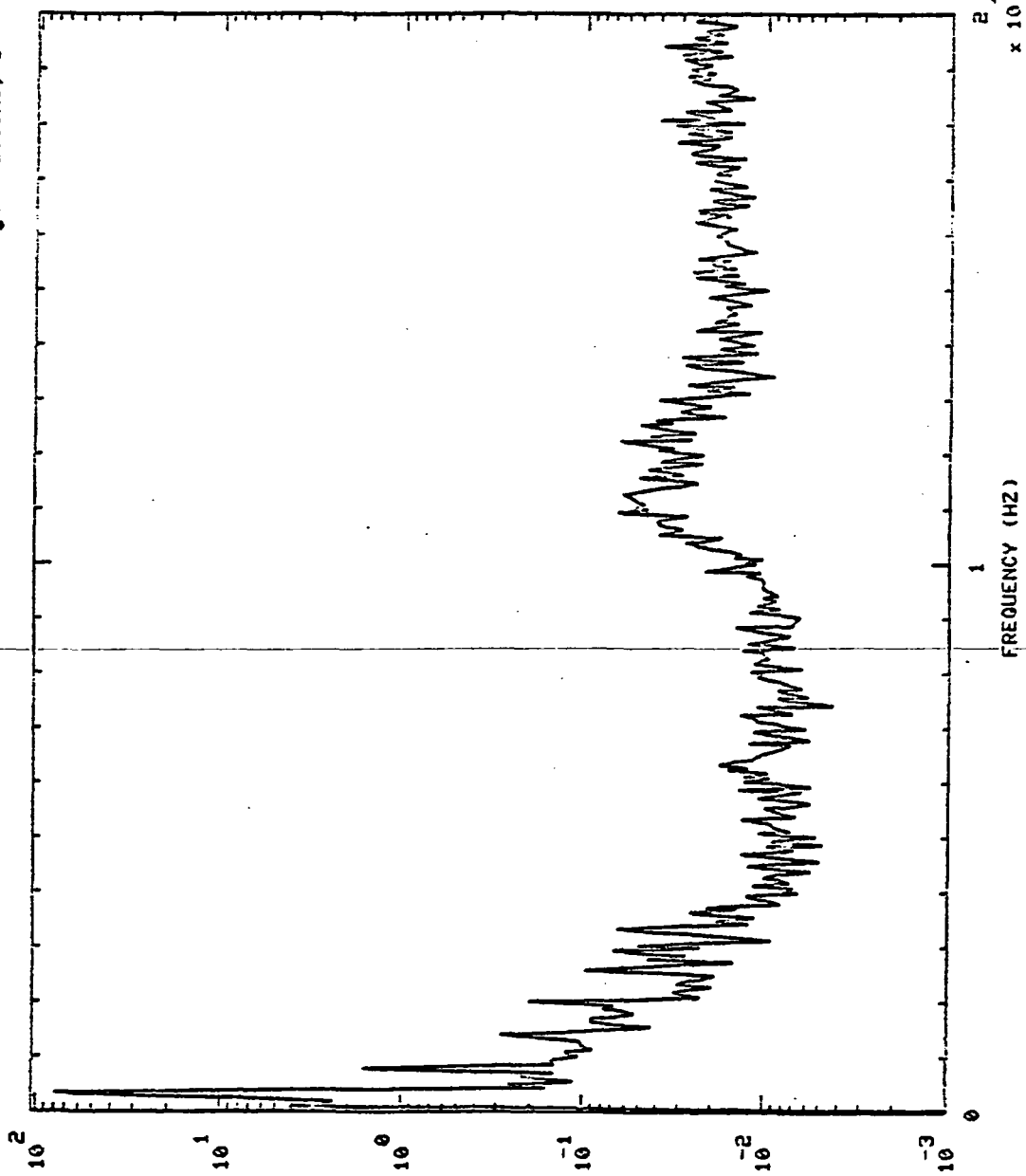
901310 MCC HOT GAS IN PR

ST 30.0110, 'S



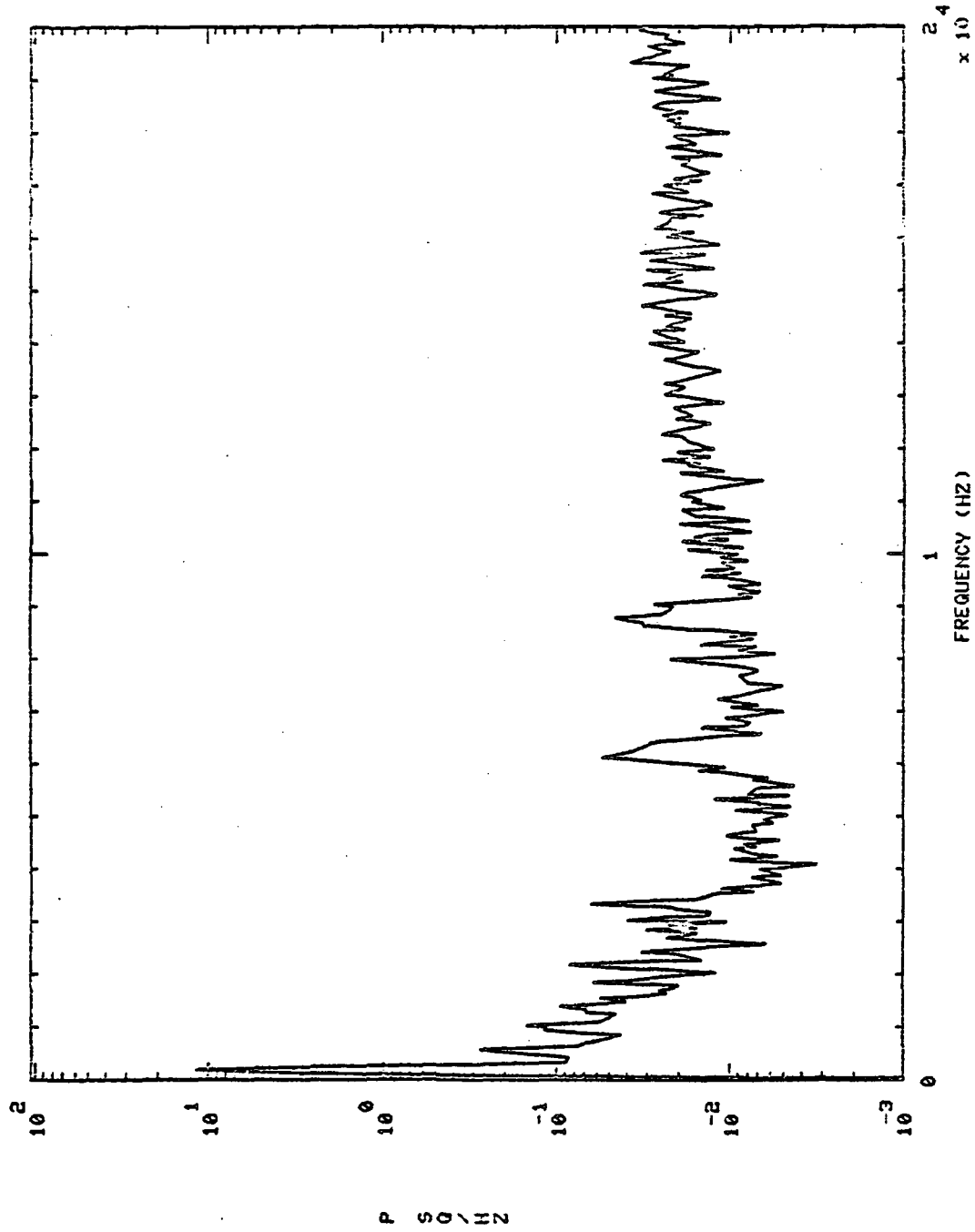
St 6.01H0,'S

901310 PBP DS PR



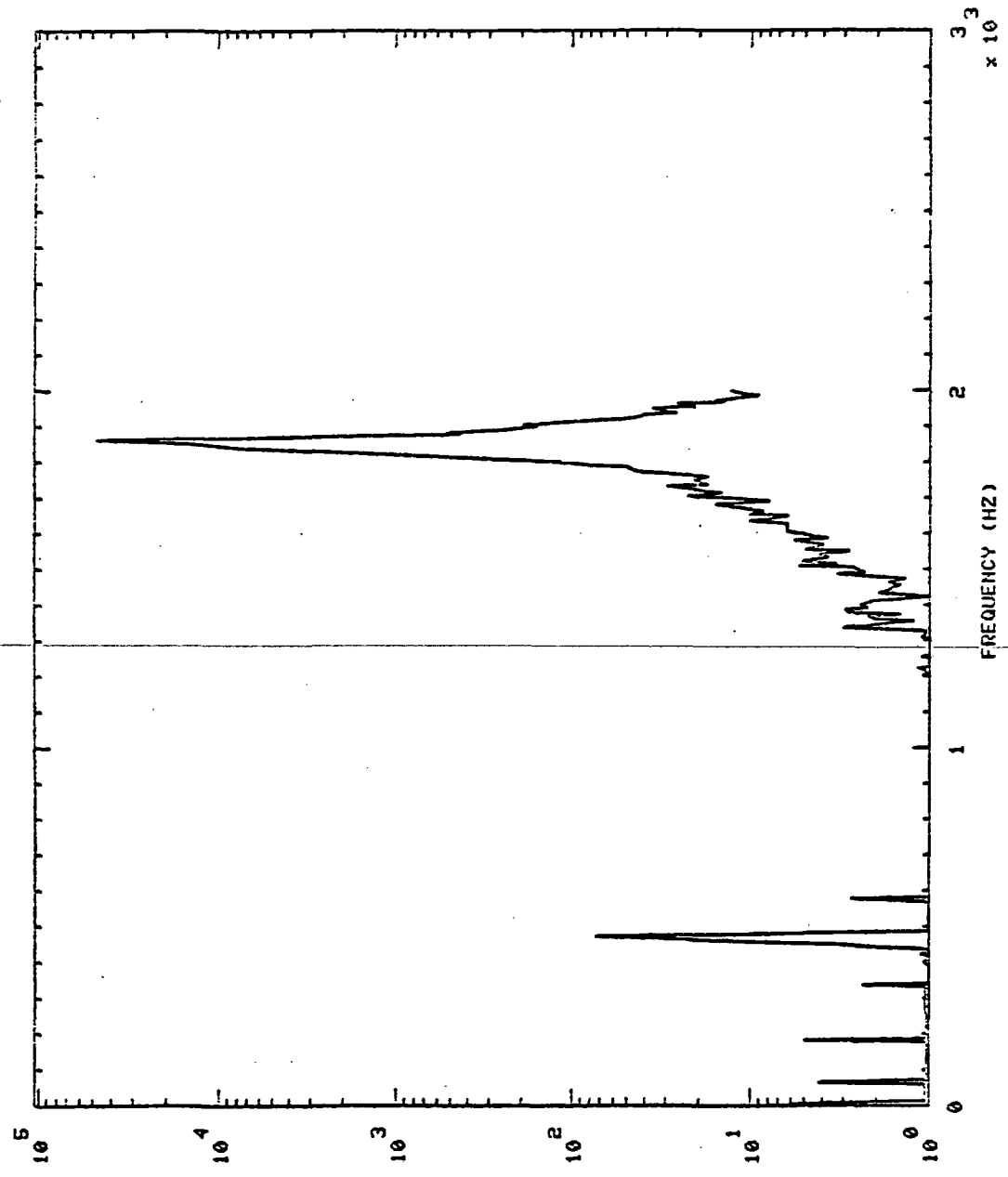
P SO \ IN

901310 PBP DS PR 51 30.01H0,'S



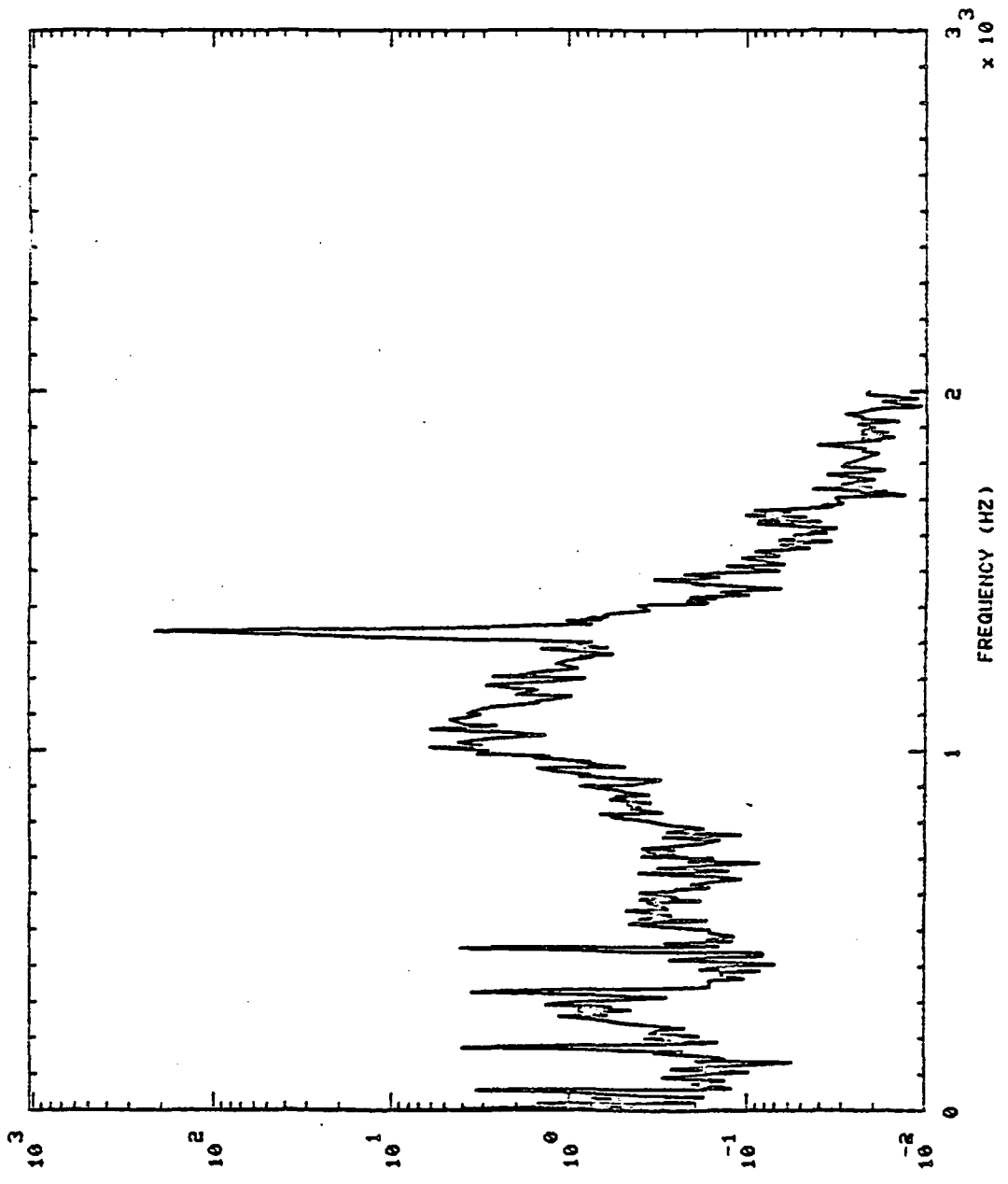
901310 HFOP IN PR

S+ 6.01H0,'S



P S Q \ H Z

901310 HPOP IN PR ST 30.01110,'S



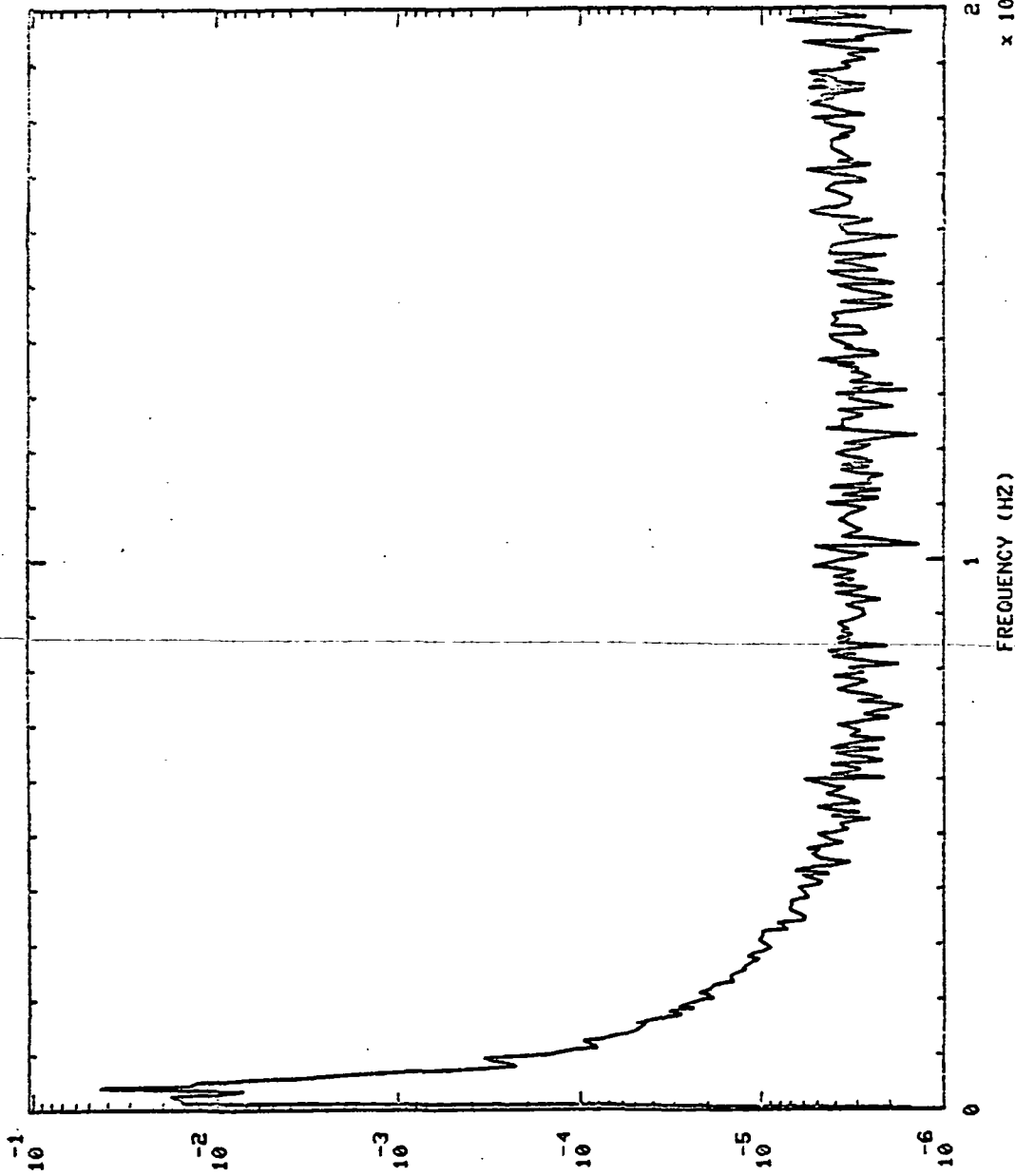
PSD (W/Hz)

$10^3$   
 $\times 10^3$

FREQUENCY (HZ)

901310 HI LX I PR

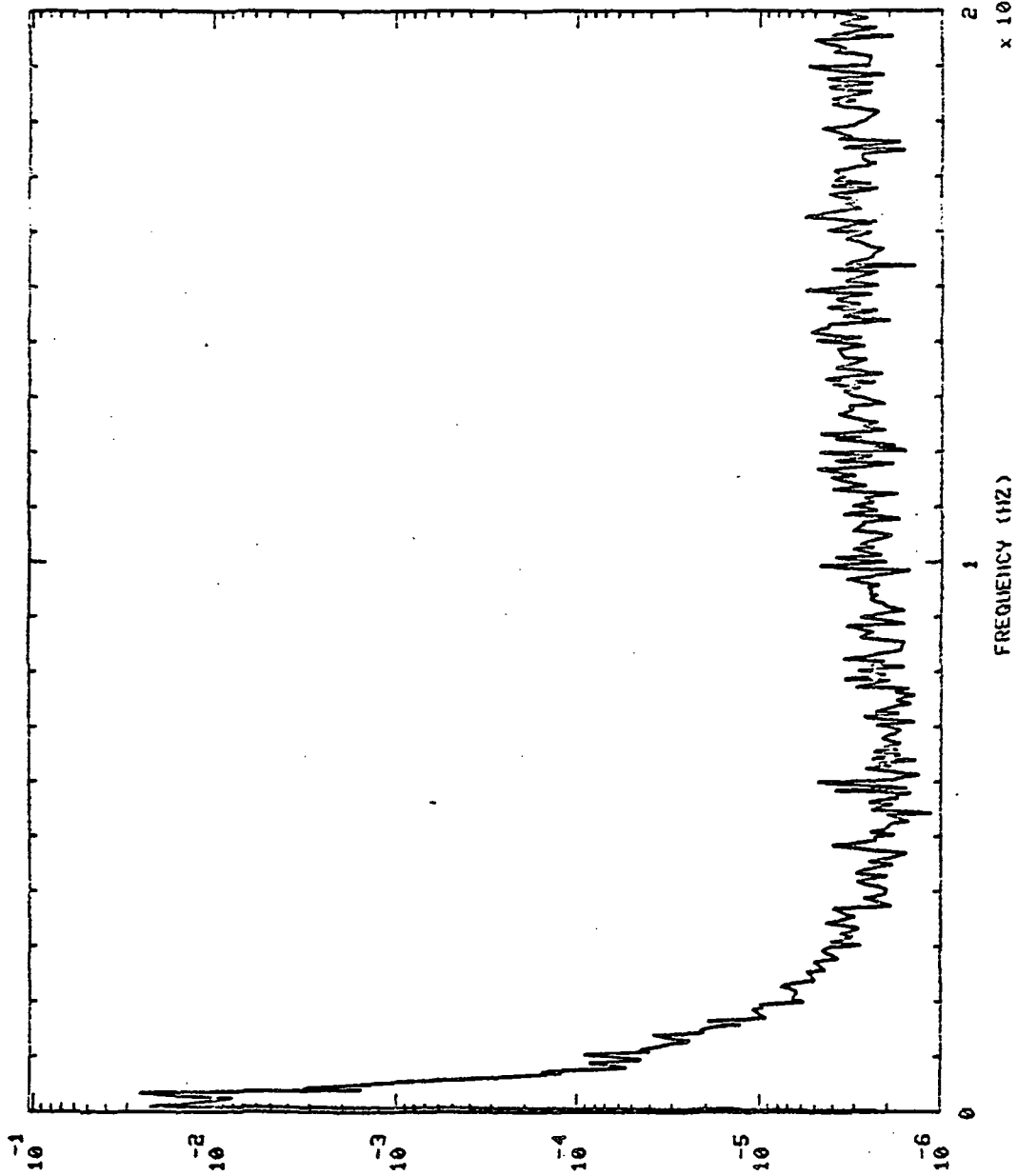
S+ 6.01H0,'S



P S D / H Z

S+ 30.01H0,'S

901310 HI LX I PR



P S D / H Z

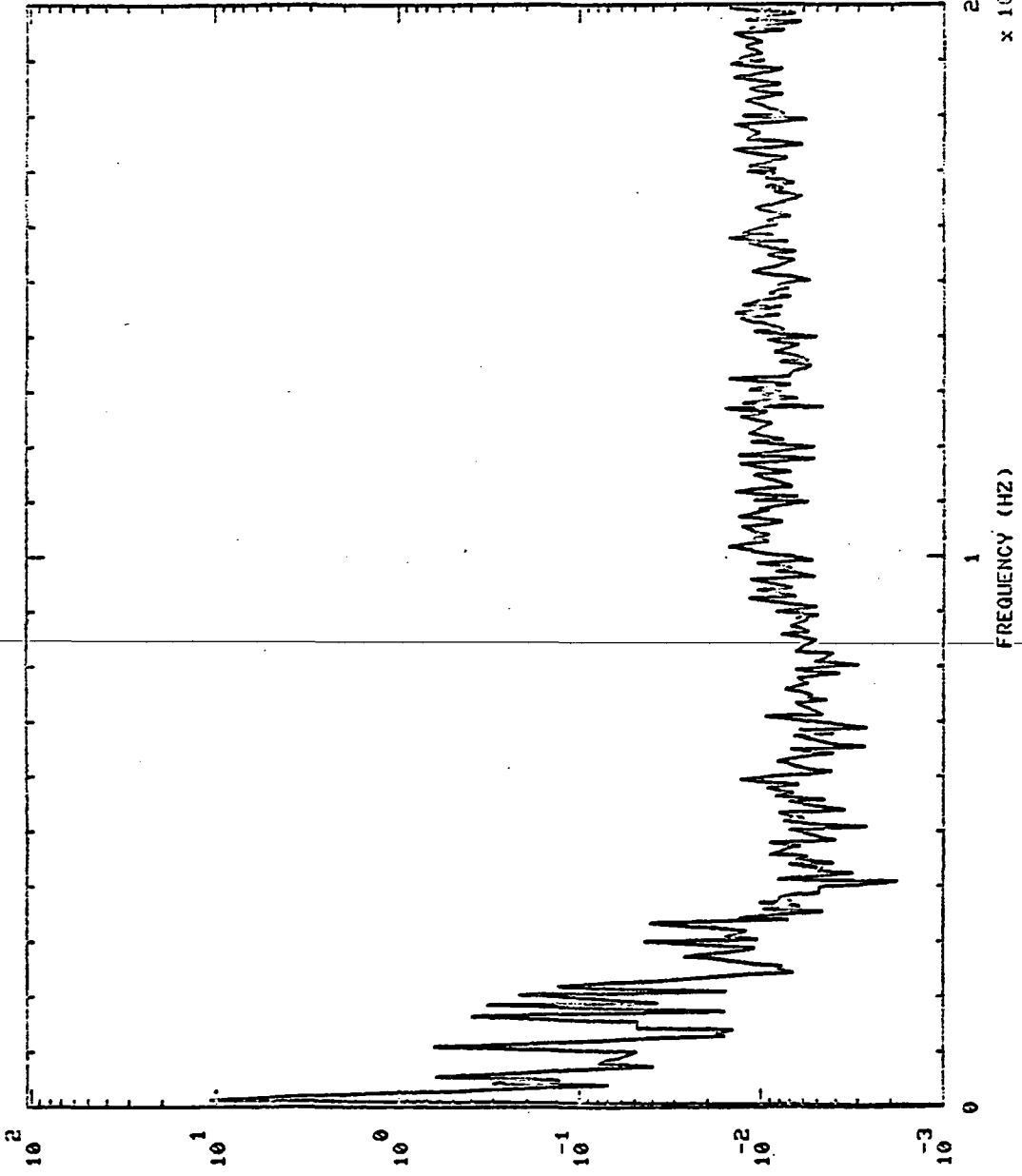
FREQUENCY (HZ)

x 10<sup>4</sup>



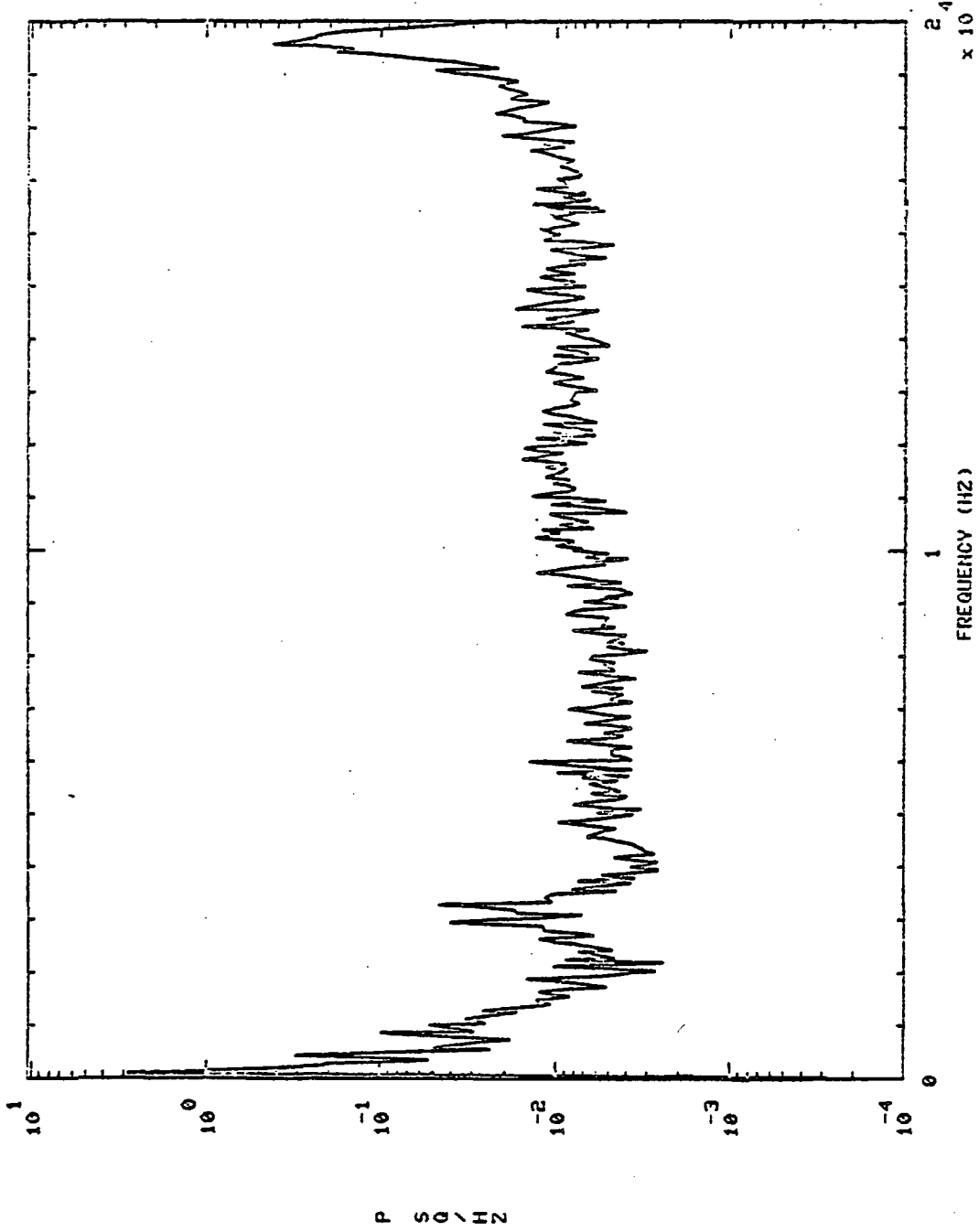
901311 HPOP DS PR

St 6.01H0,'S

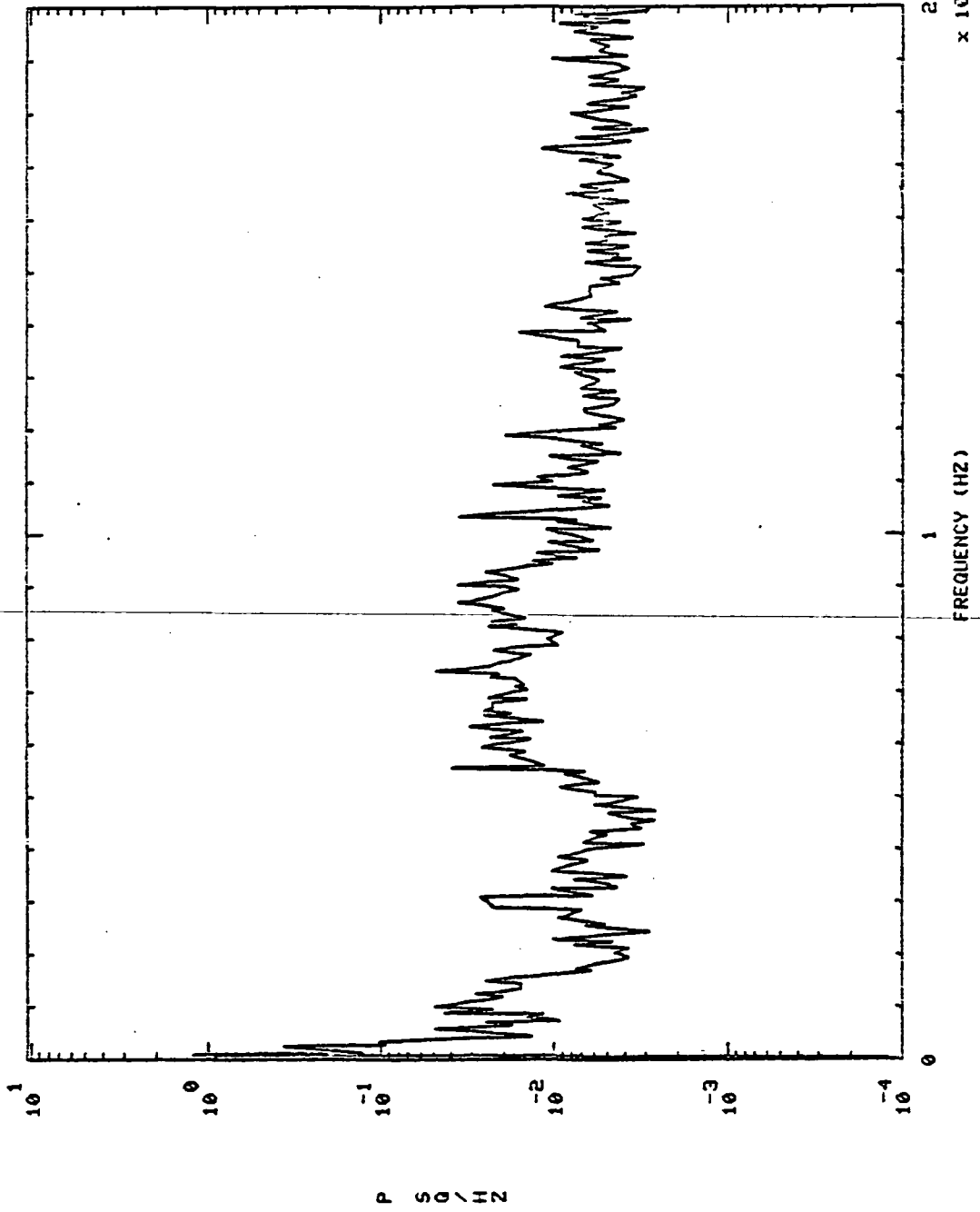


P S O / H Z

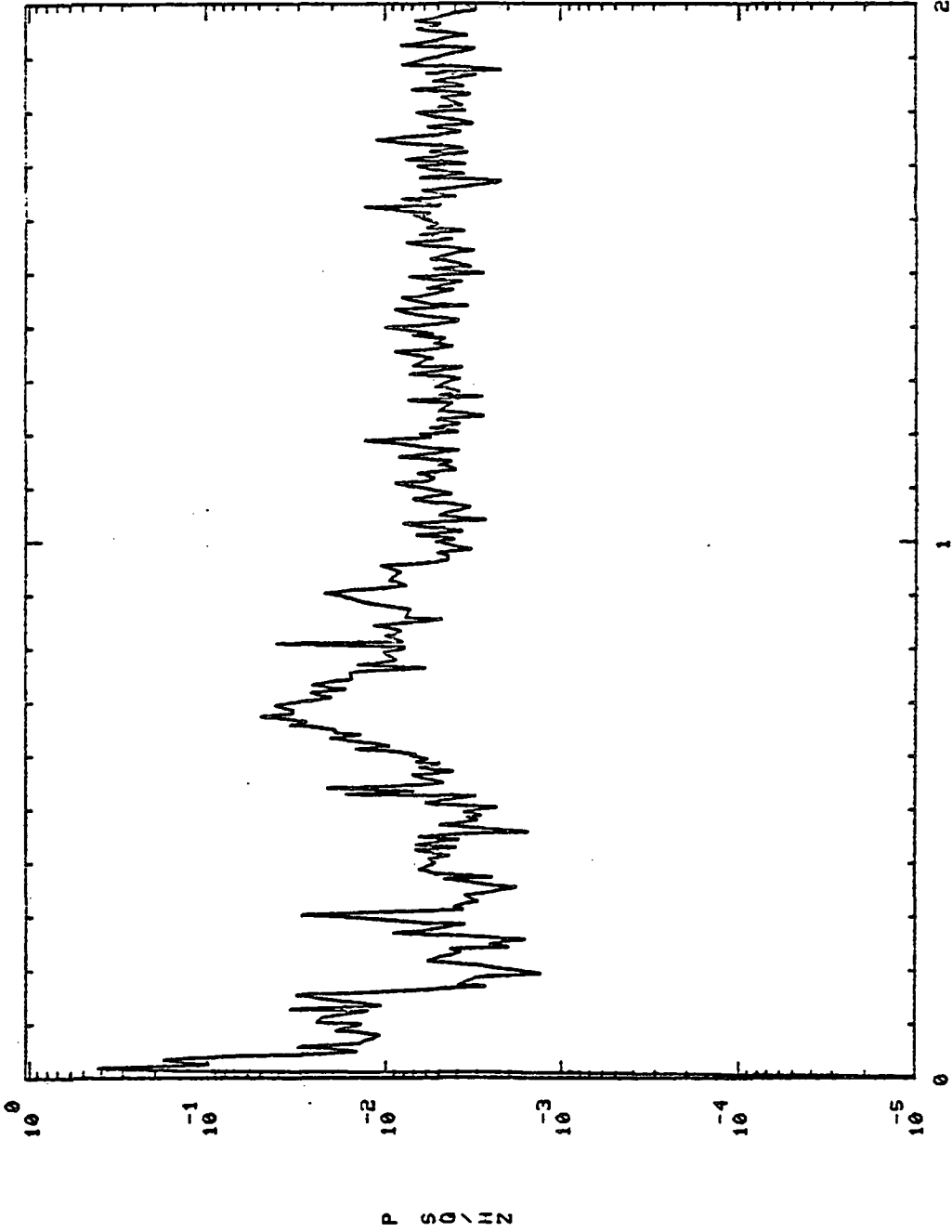
901311 HPOP DS PR ST 30.01H0,'S



901311 MCC HOT GAS IN PR S+ 6.0110.'S



901311 MCC HOT GAS IN PR S+ 30.01H0,'S

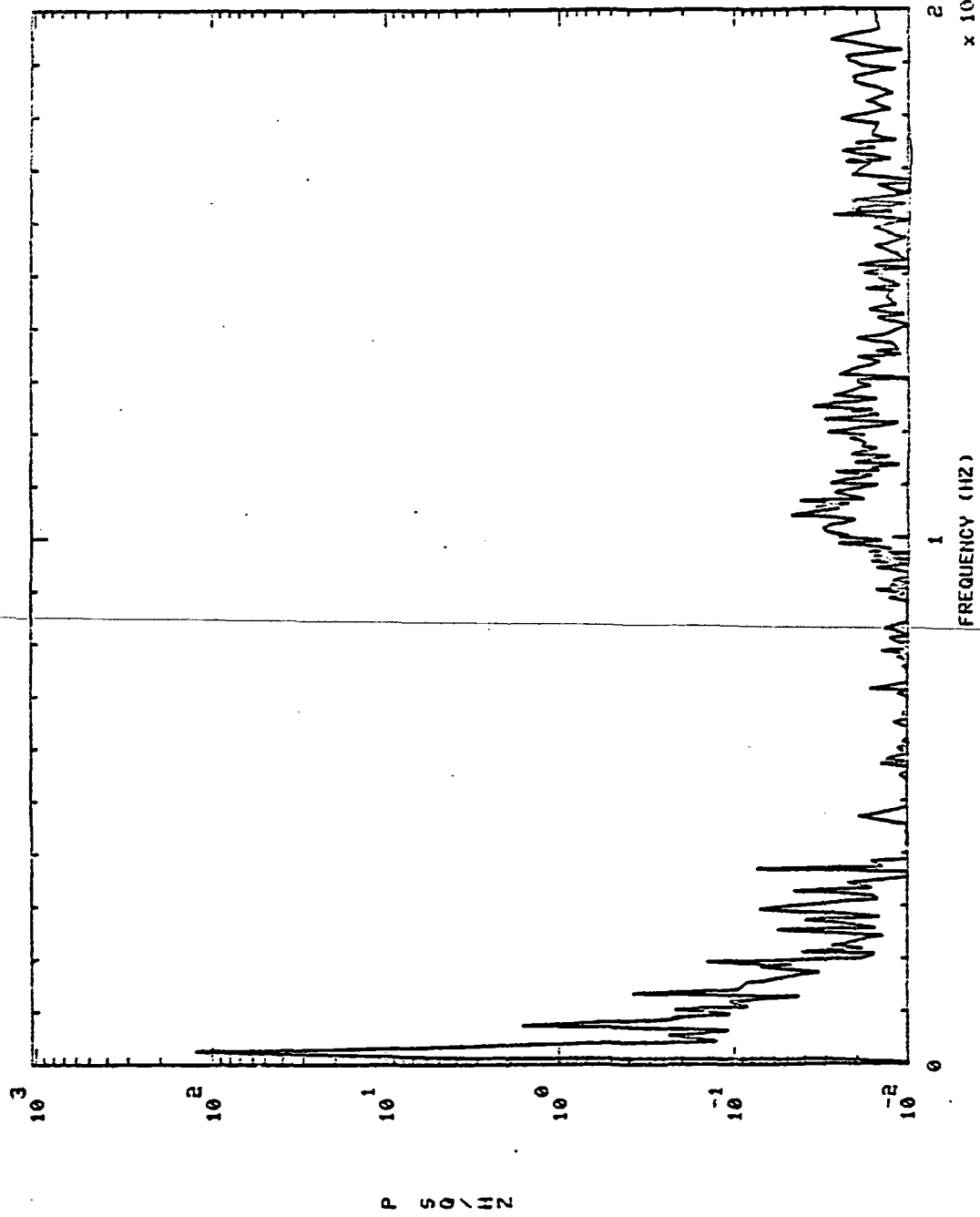


FREQUENCY (HZ)

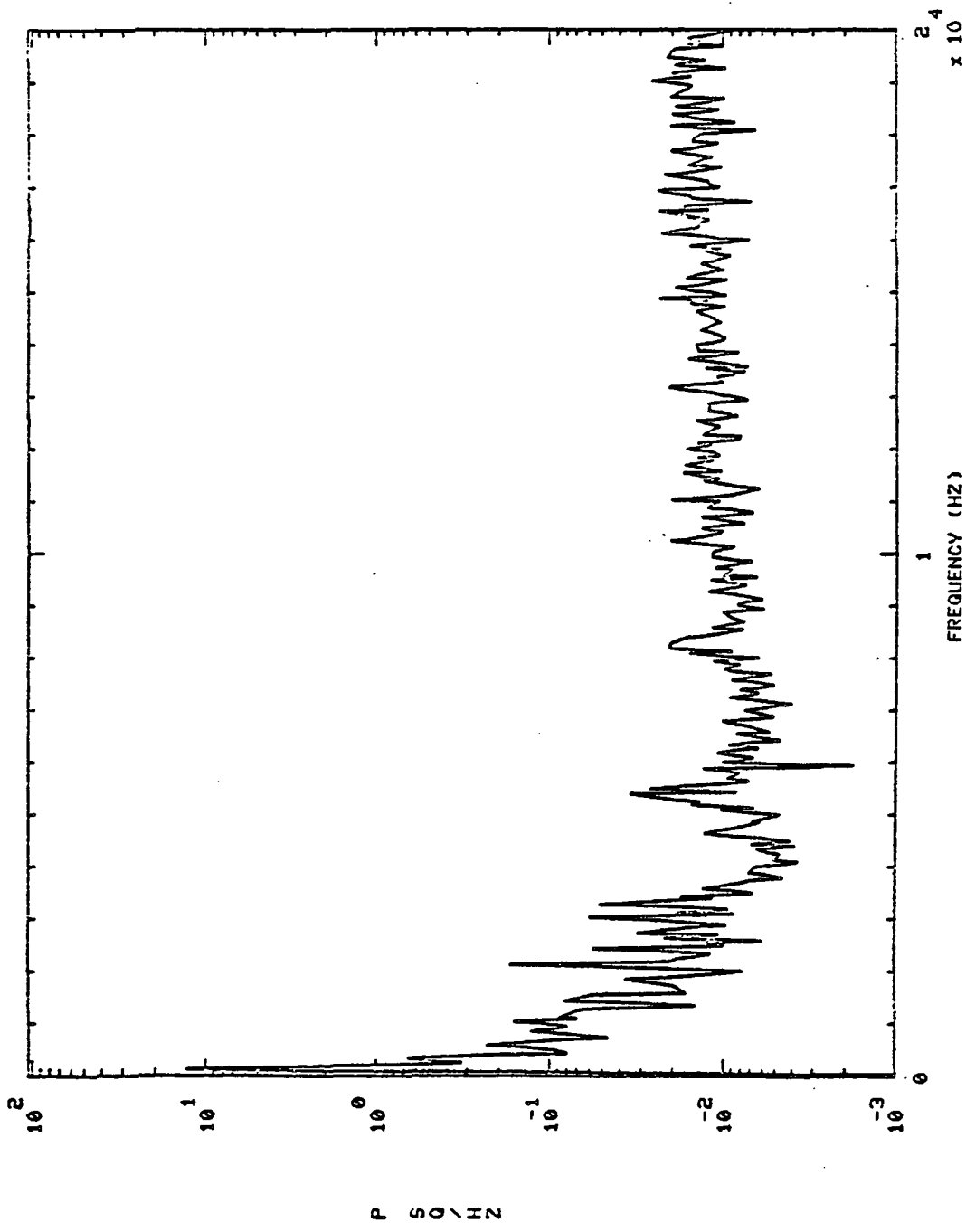
$\times 10^4$

901311 PBP DS PR

S4 6.0140,'S

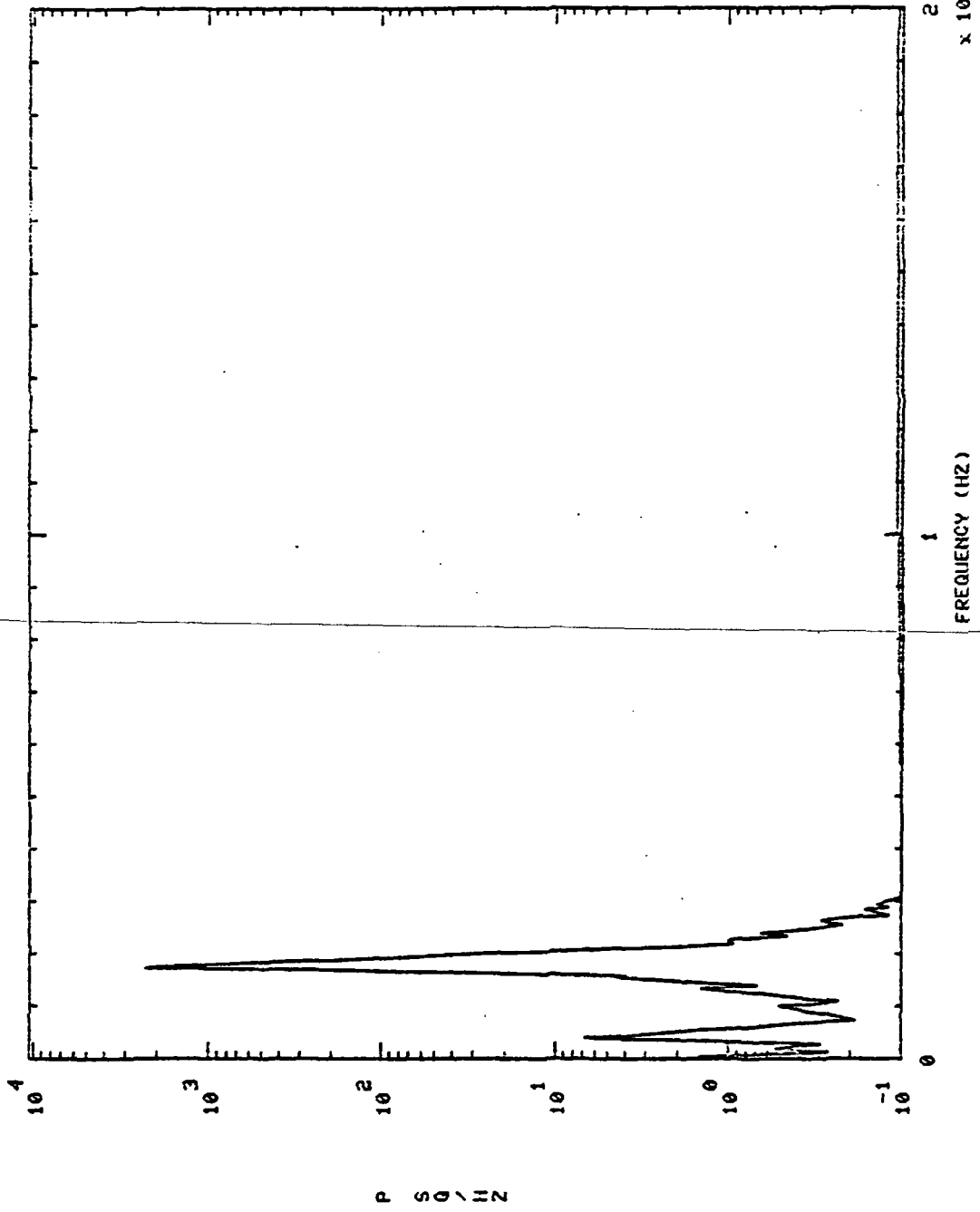


901311 PBP DS PR S+ 30.01H0,'S



901311 HPOP IN PR S+ 6.01H0,'S

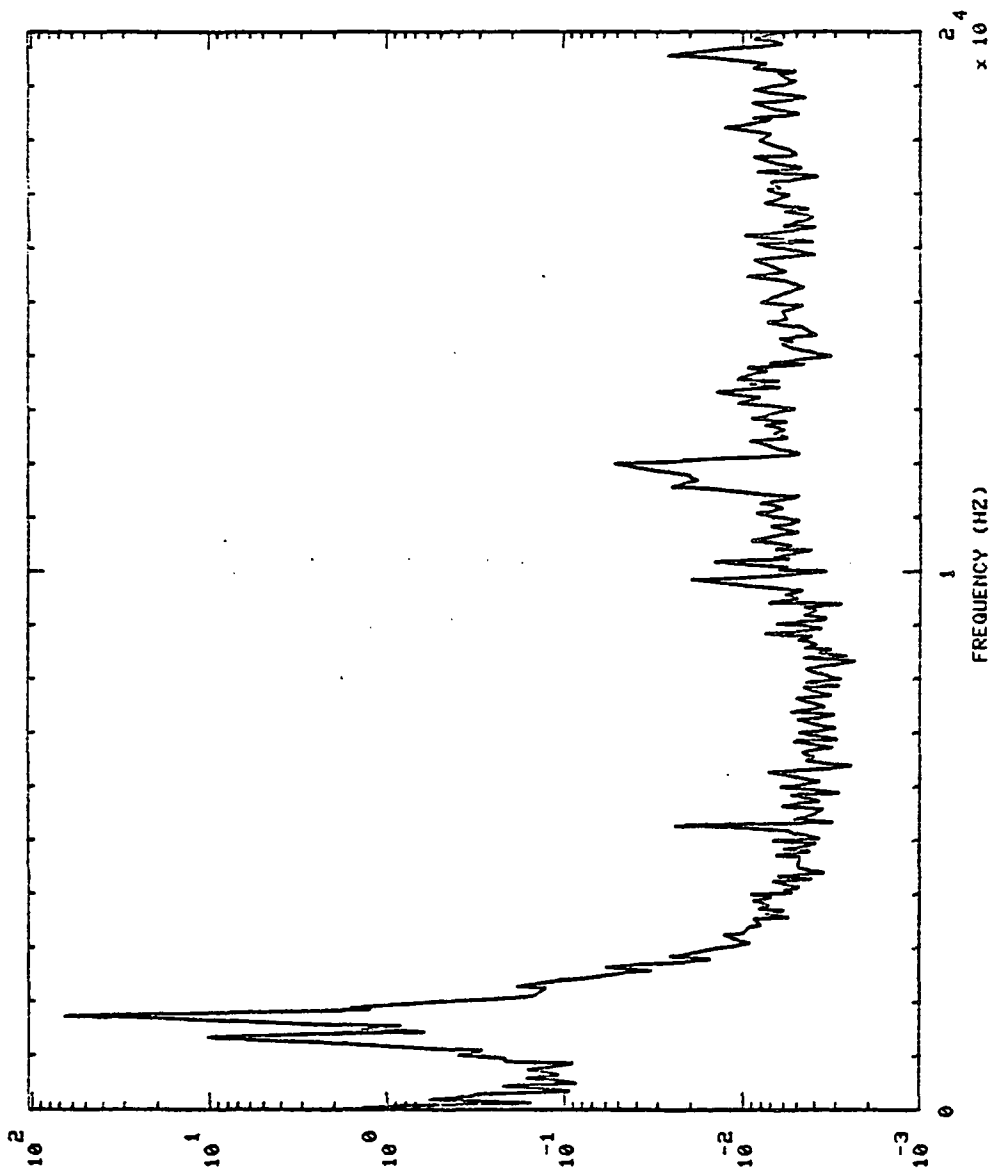
901311 HPOP IN PR



901311 HPOP IN PR St 30.01110.'S

901311 HPOP IN PR

901311 HPOP IN PR

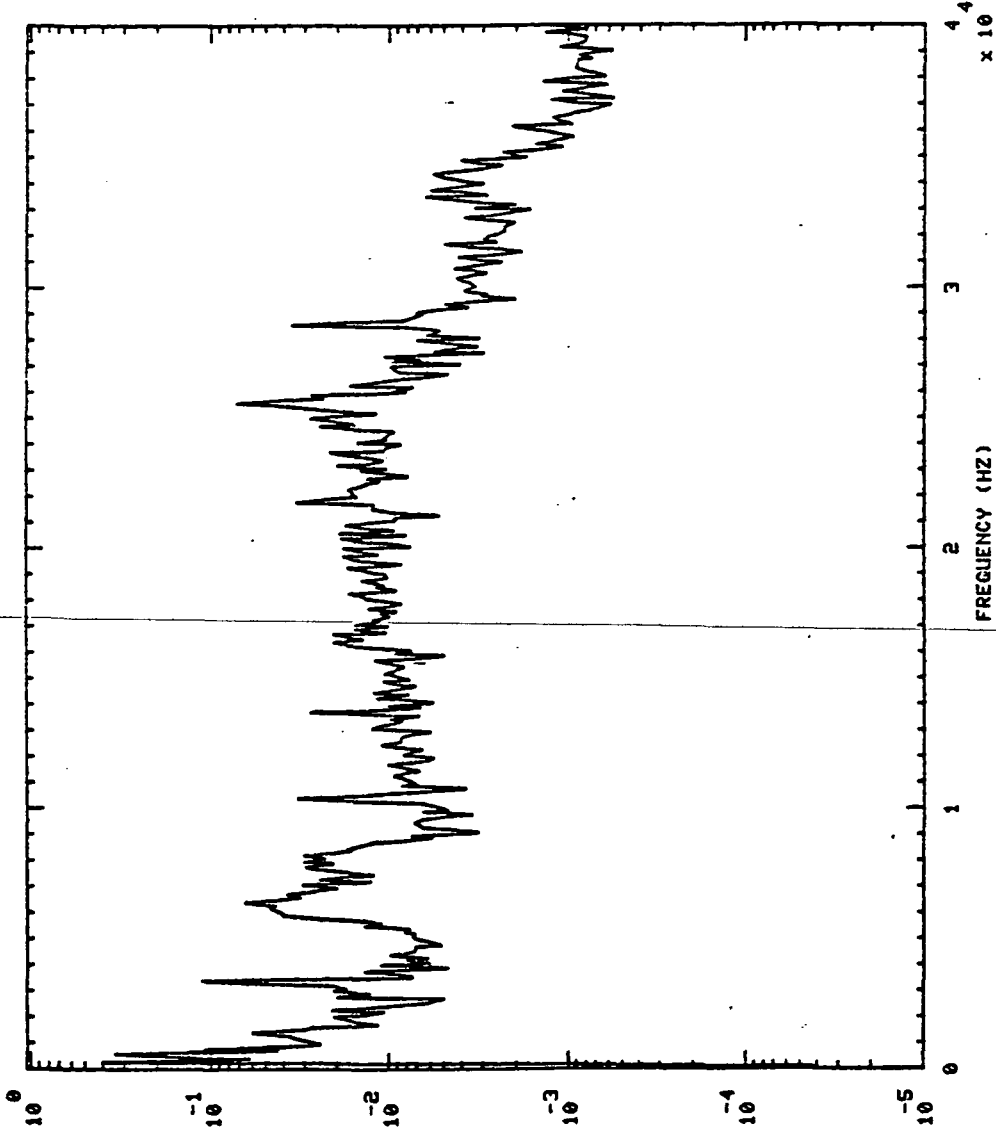


P S D \ / \ I N



901306 MCC HOT GAS IN PR ST 20.01H0,'S

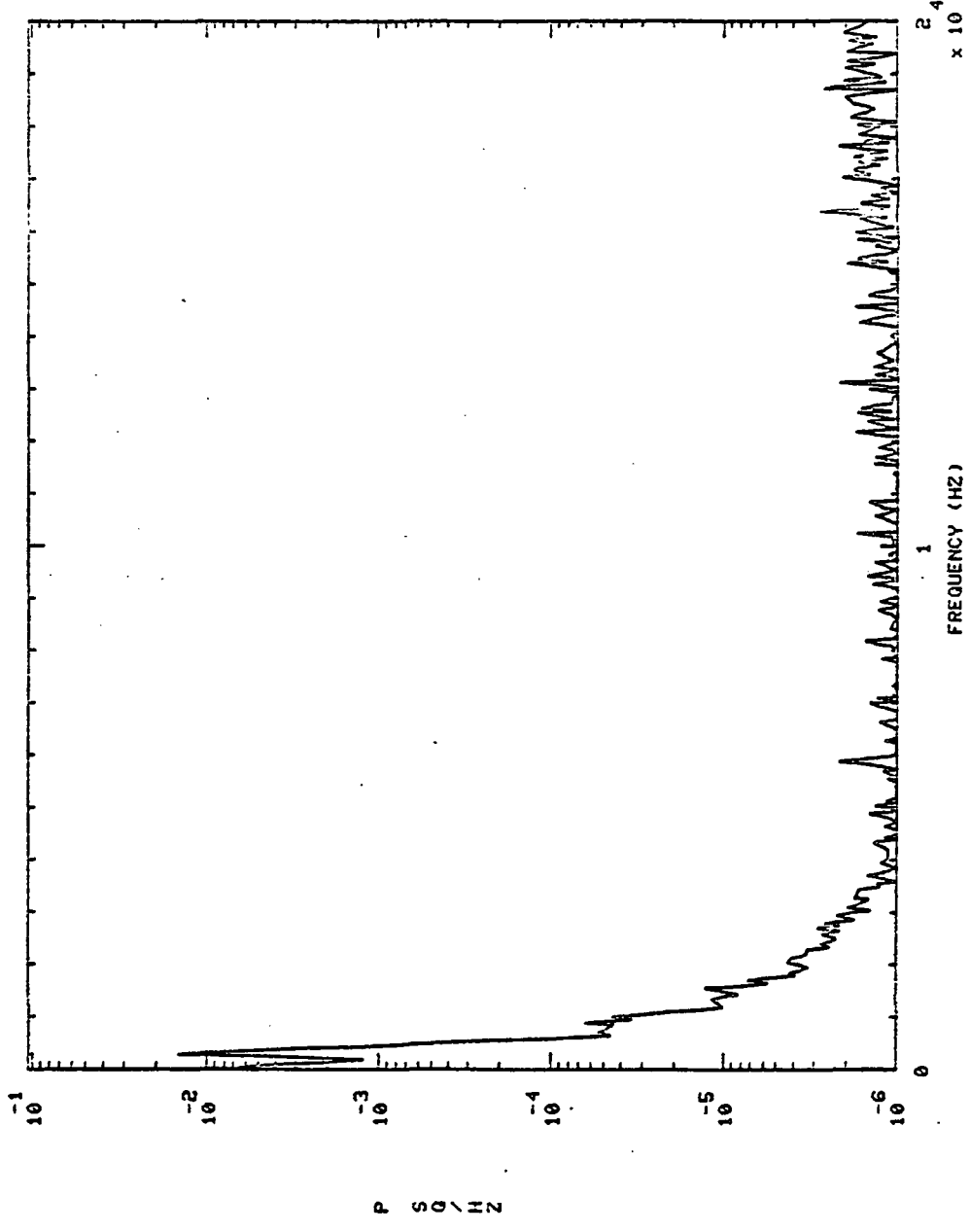
901306 MCC HOT GAS IN PR



P S D \ H N

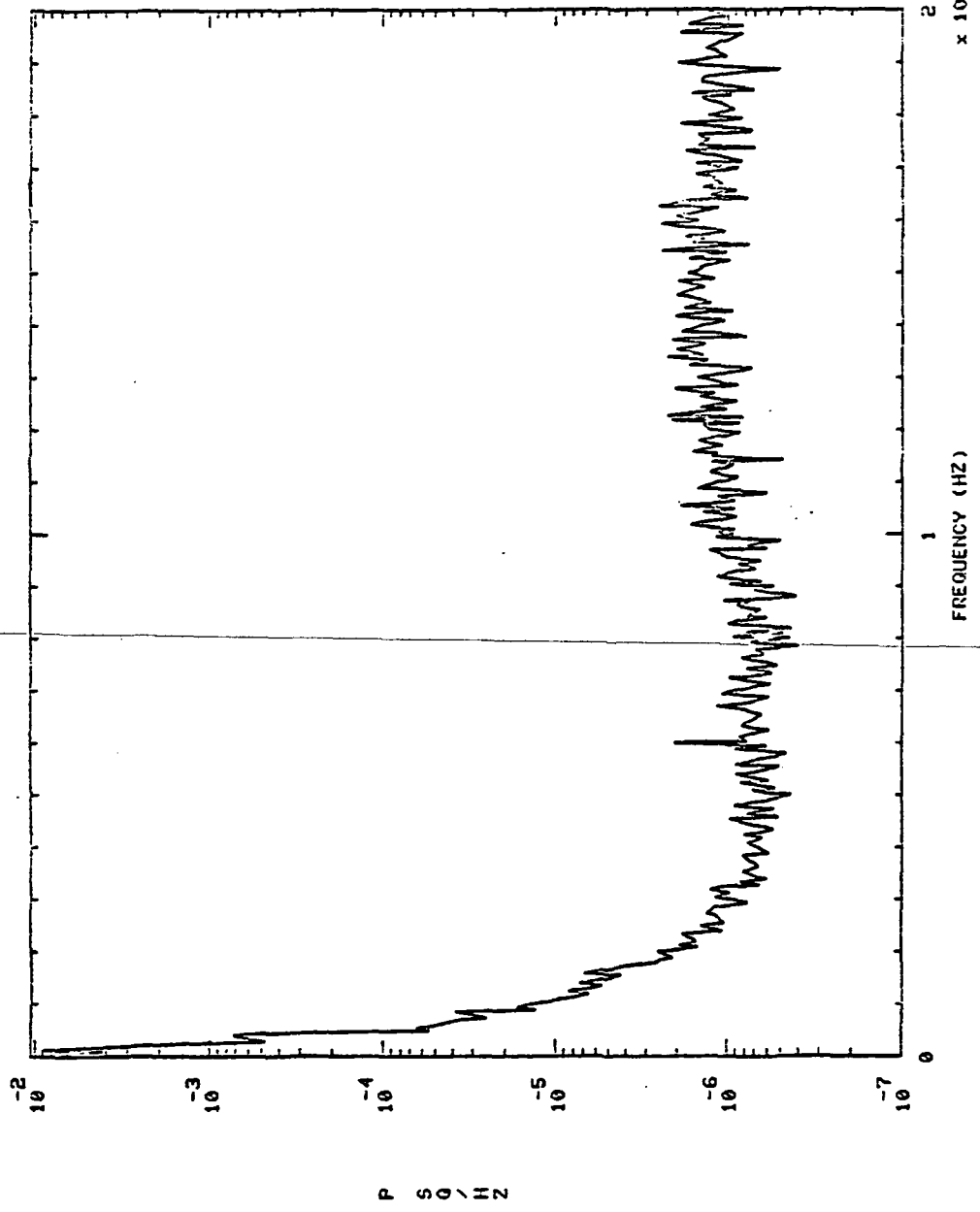
901311 HI LX I PR St 6.01110, 'S

901311 HI LX I PR



51 30.0110, 'S

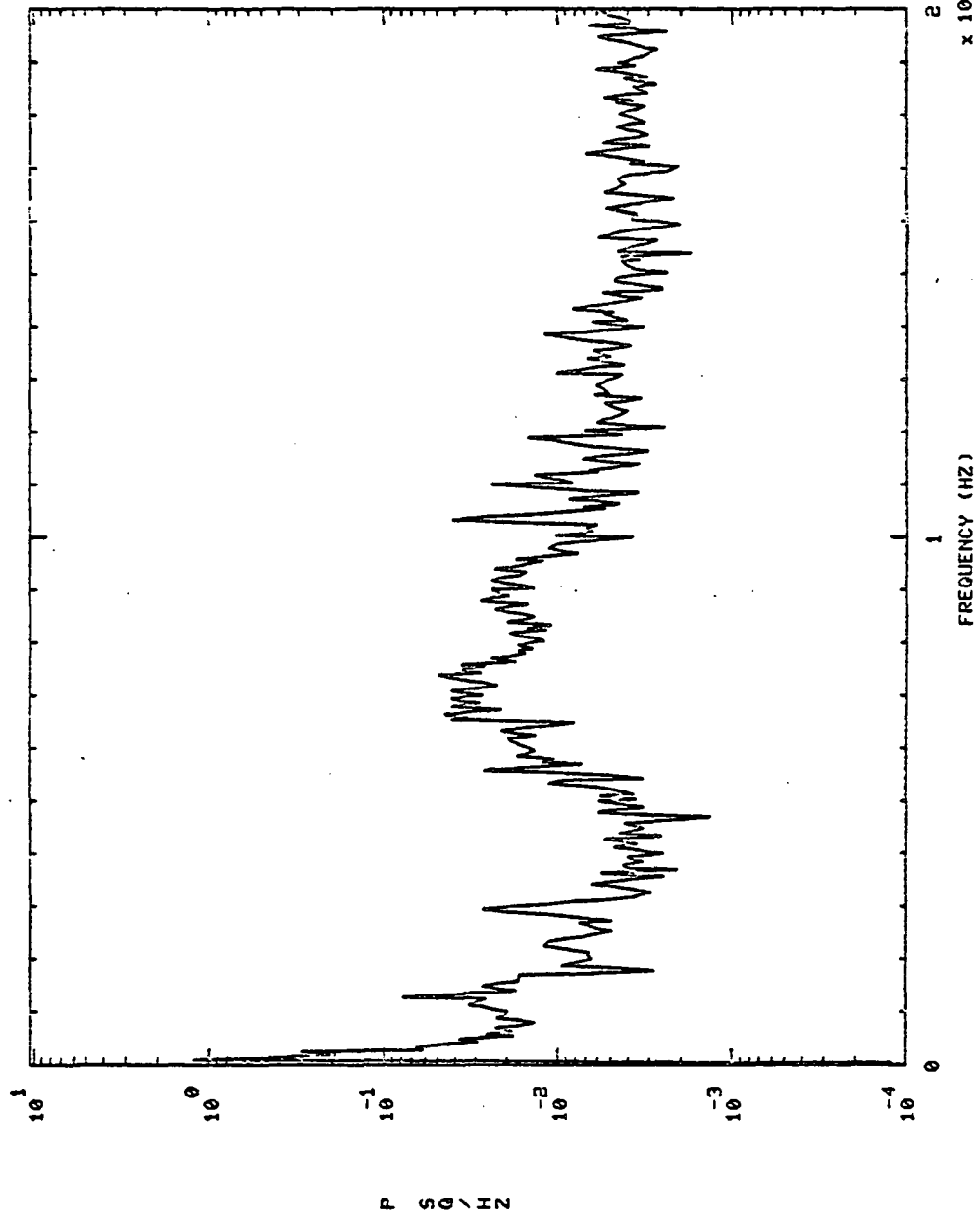
901311 HI LX I PR



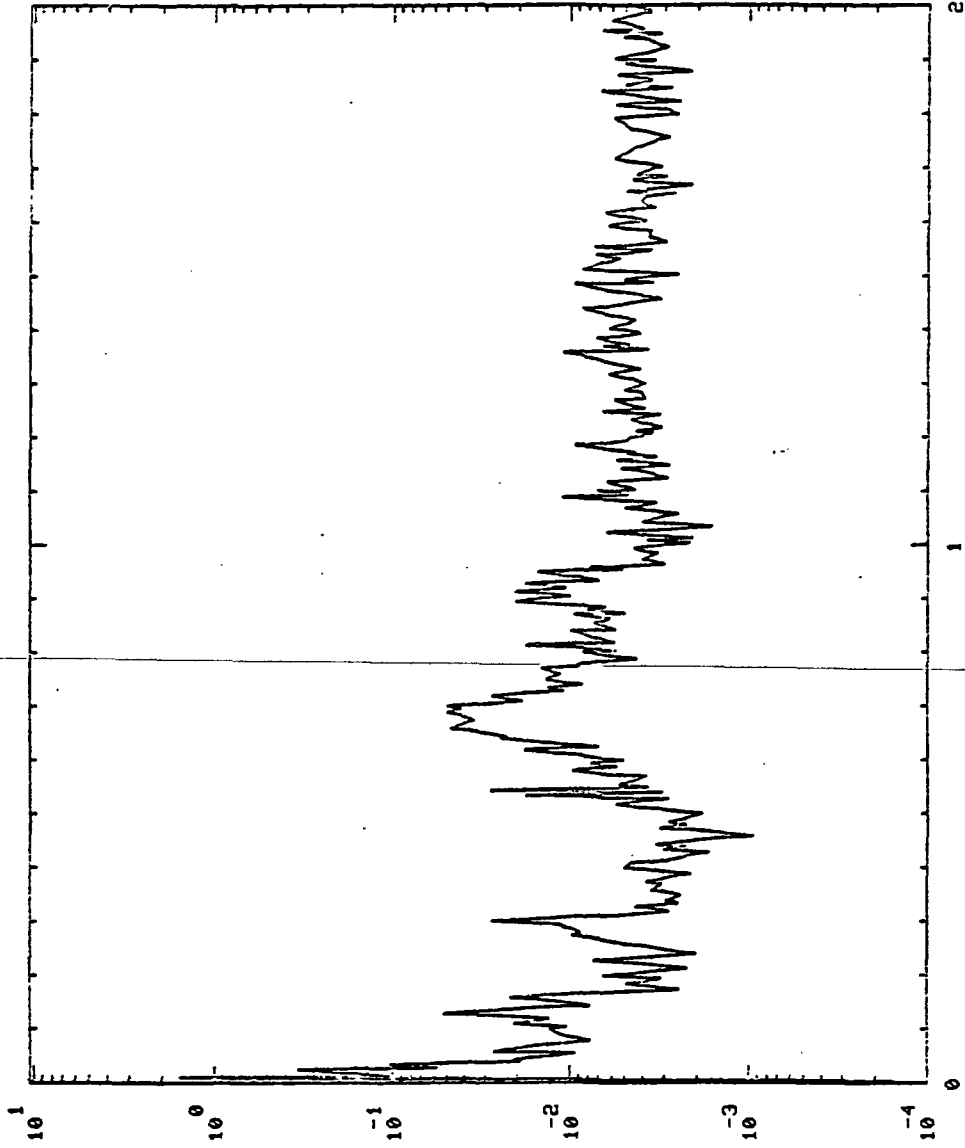
901312 MCC HOT GAS IN PR S+ 6.01H0,'S

901312 MCC HOT GAS IN PR

901312



901312 FCC HOT GAS IN PR S+ 40.0110.'S

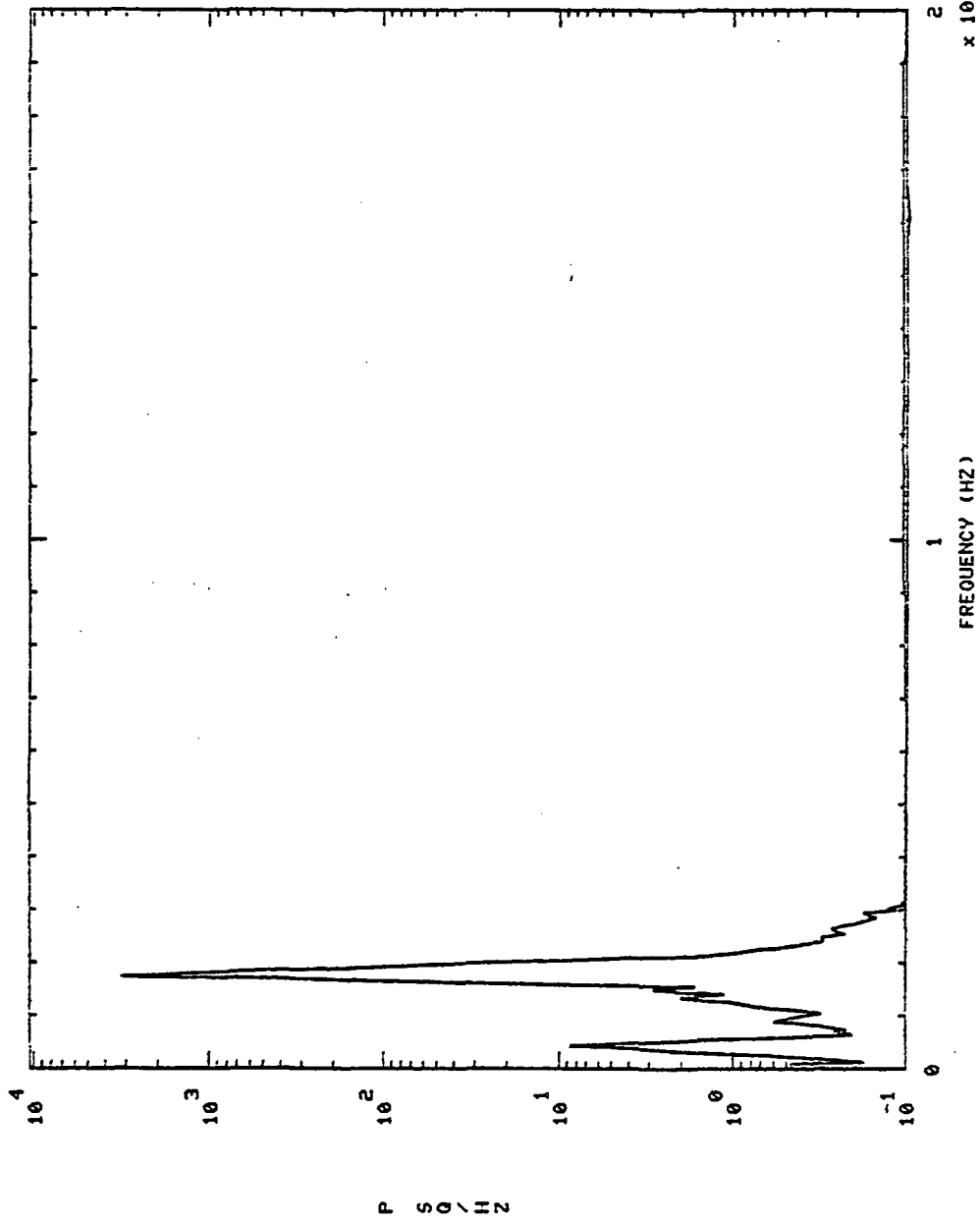


PSOHN

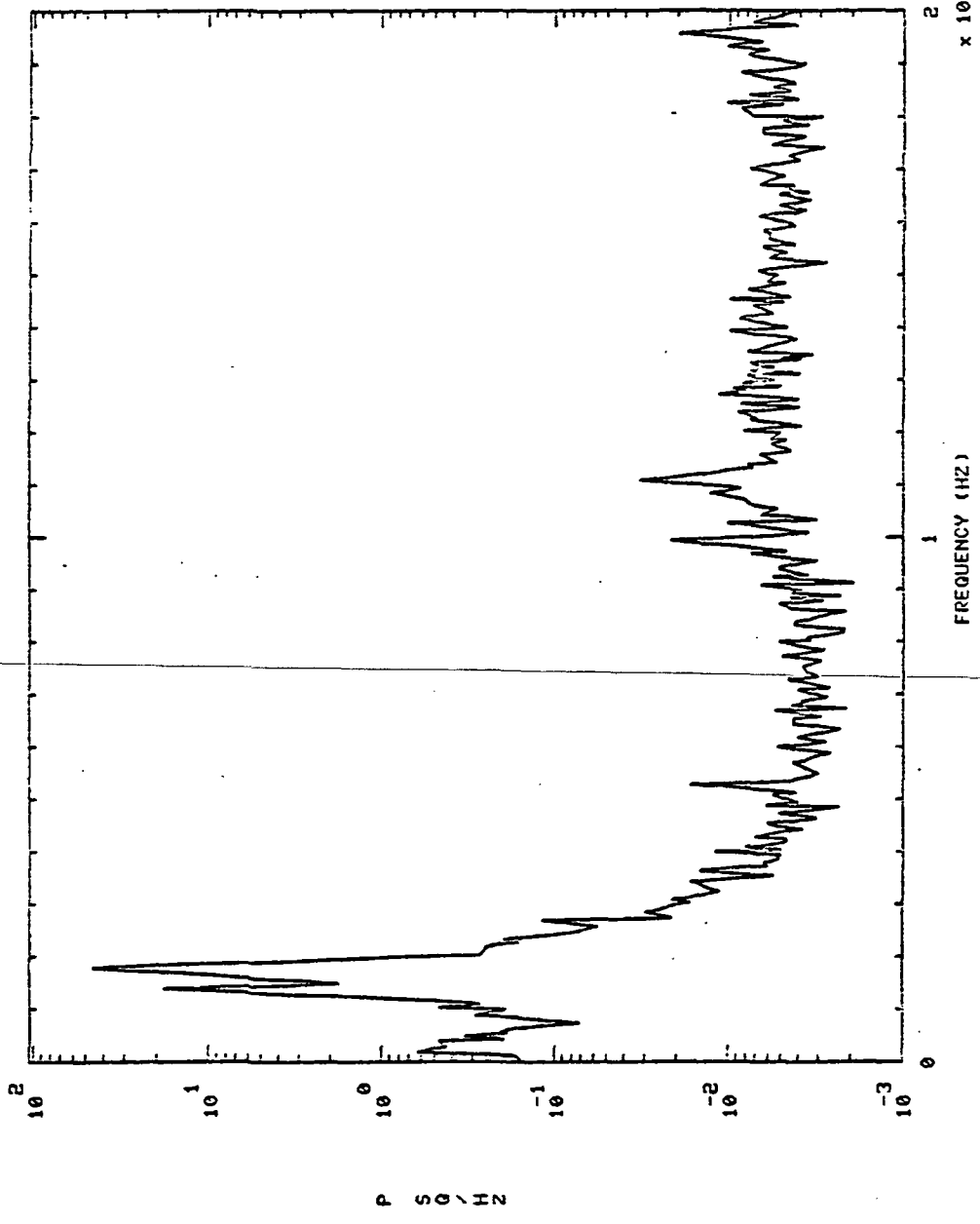
FREQUENCY (HZ)

x 10<sup>4</sup>

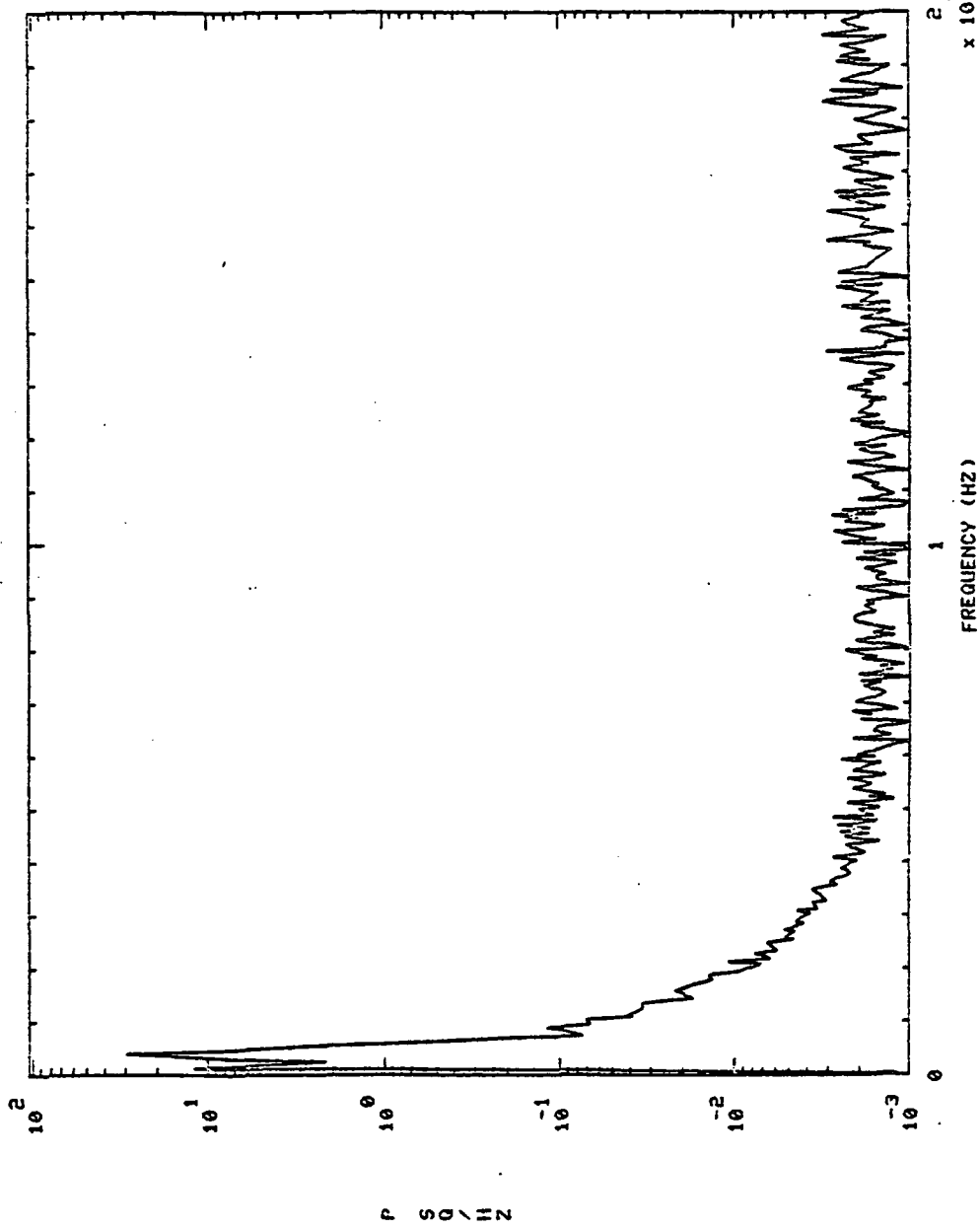
901312 HFOP IN PR S# 6.01H0,'S



801312 HPOP IN PR S+ 40.0110,'S

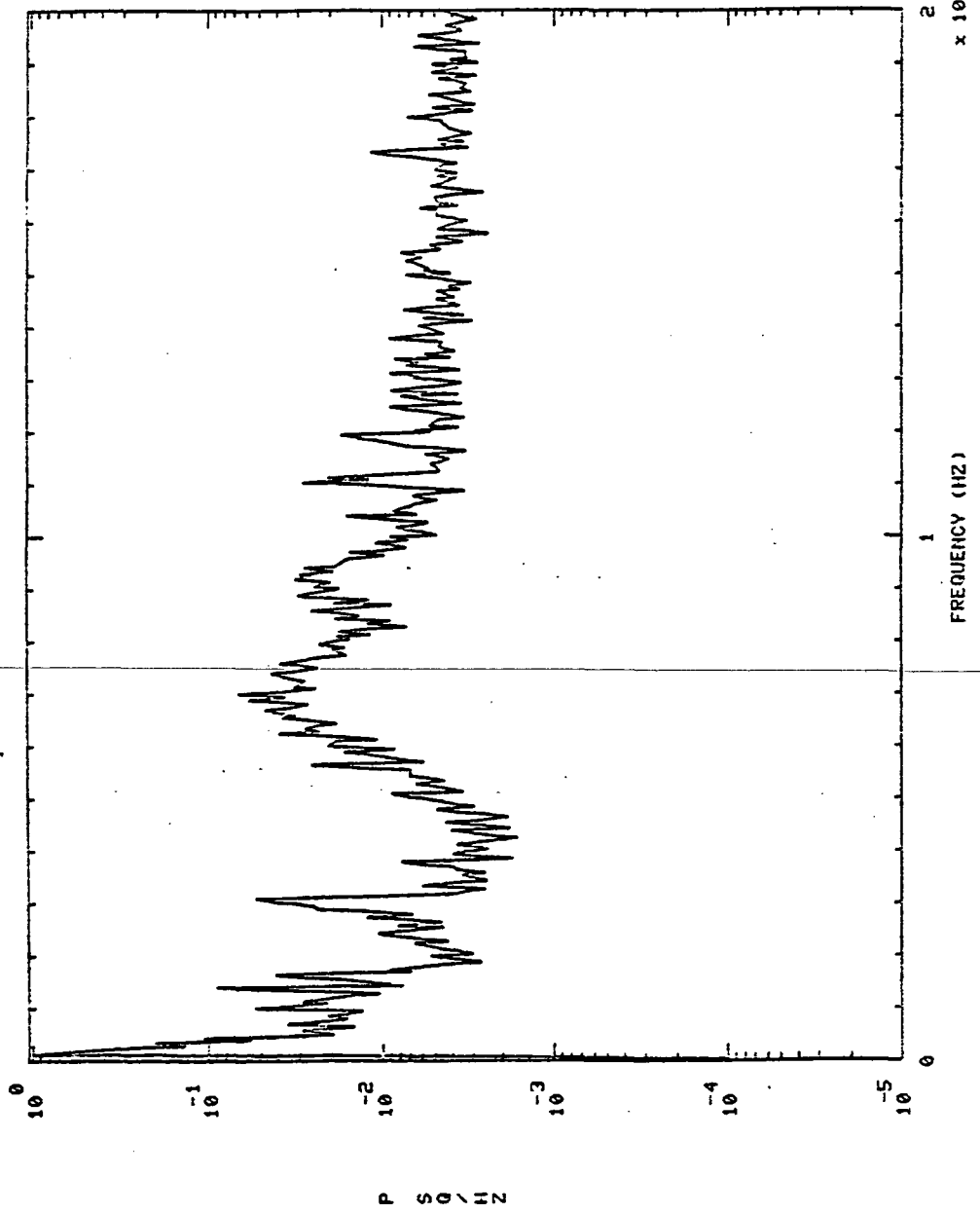


901312 HI LX I PR 5+ 6.01H0, 'S





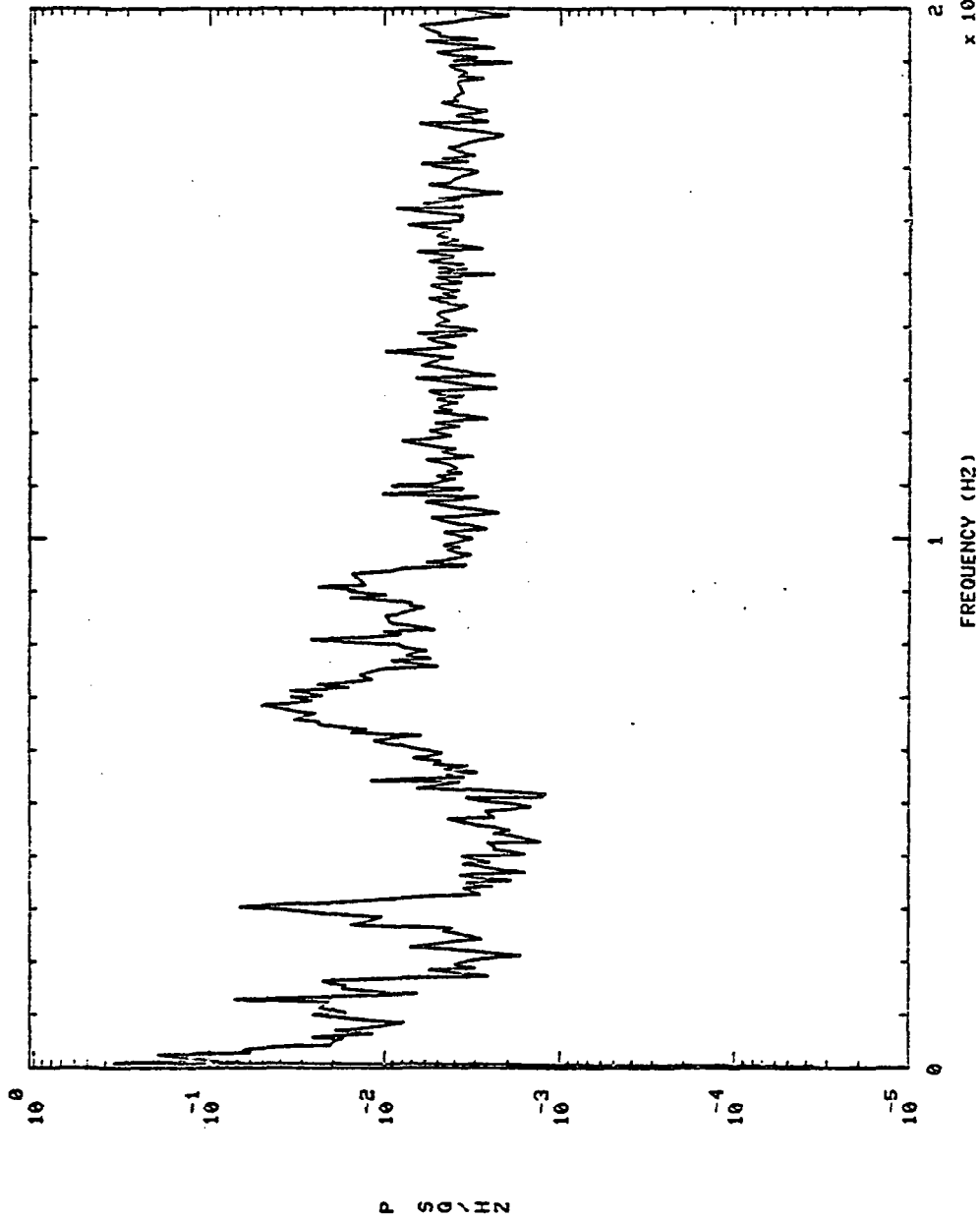
901313 MCC HOT GAS IN PR S+ 4.01H0,'S



901313 MCC HOT GAS IN PR S+ 30.01H0,'S

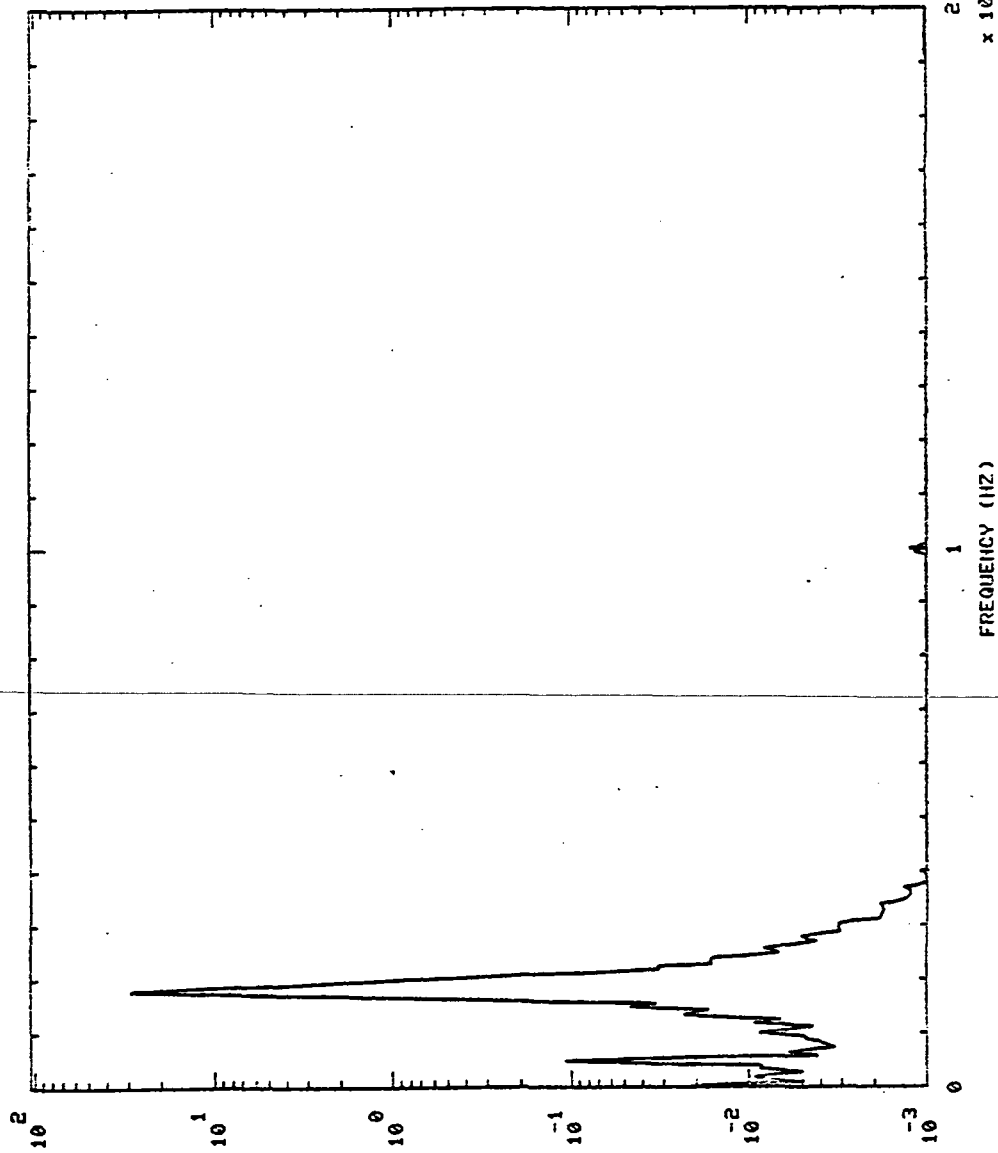
901313 MCC HOT GAS IN PR

901313



SA 4.01110,'S

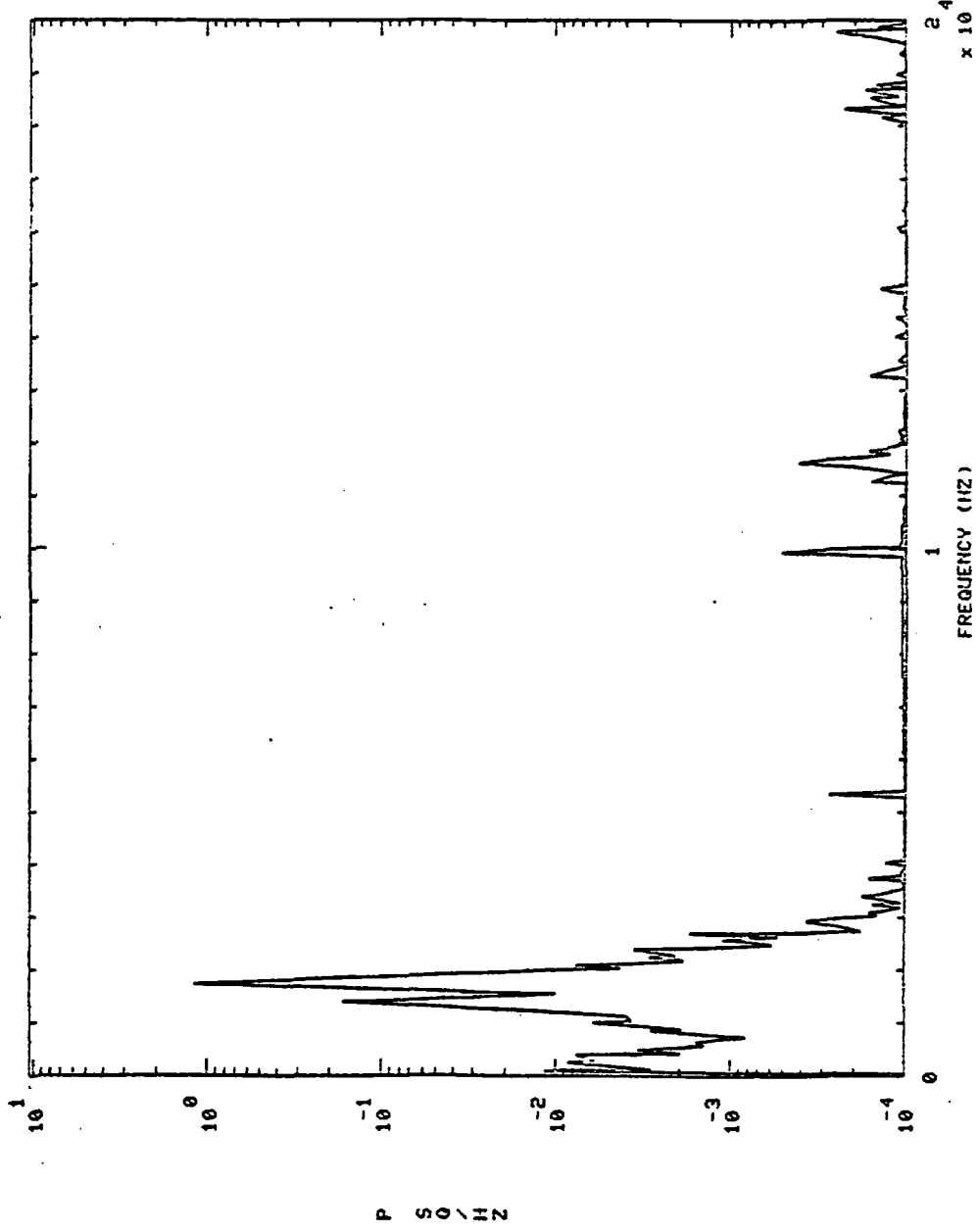
901313 HPOP IN PR



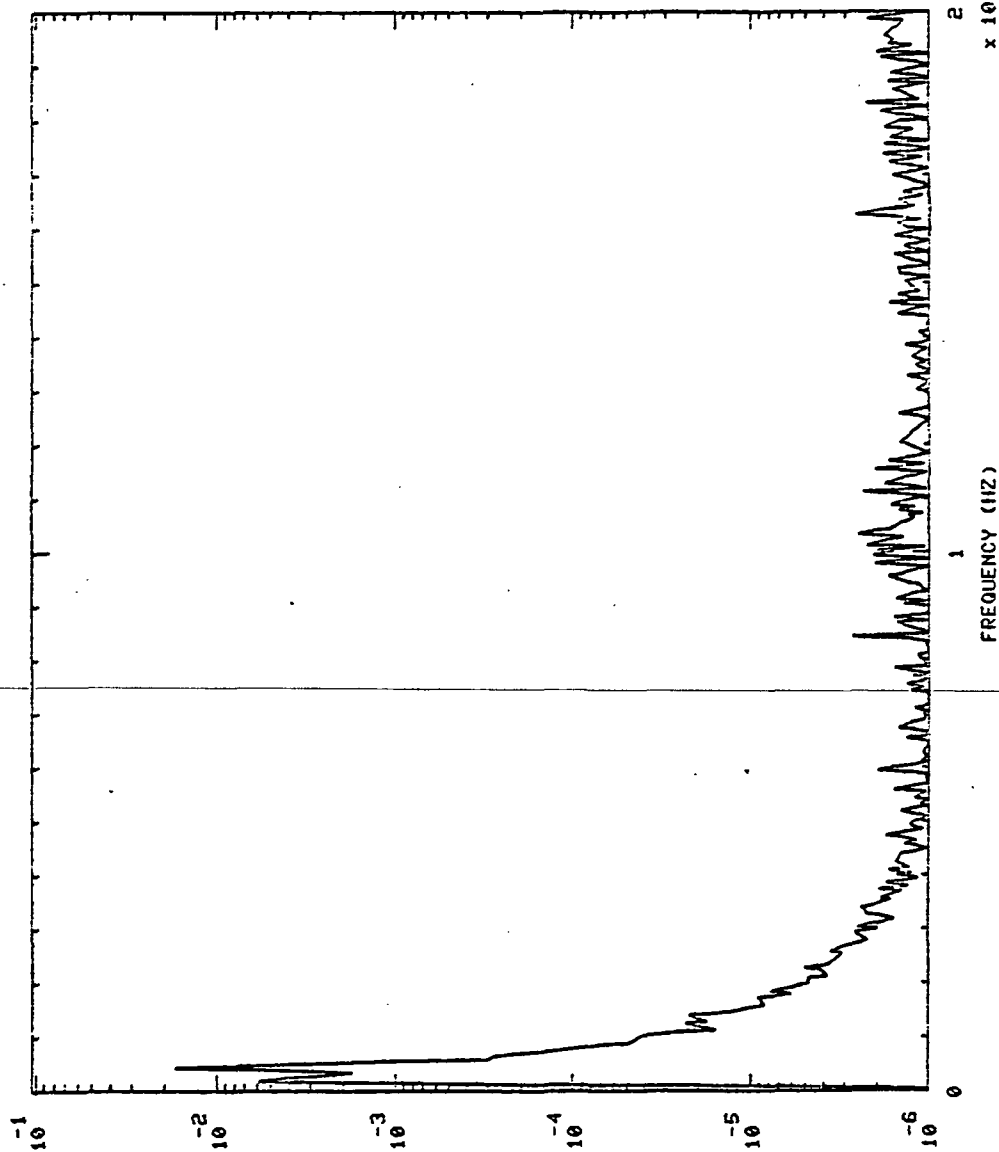
P S O \ H N

S+ 30.01H0.5

901313 HP0P IN PR



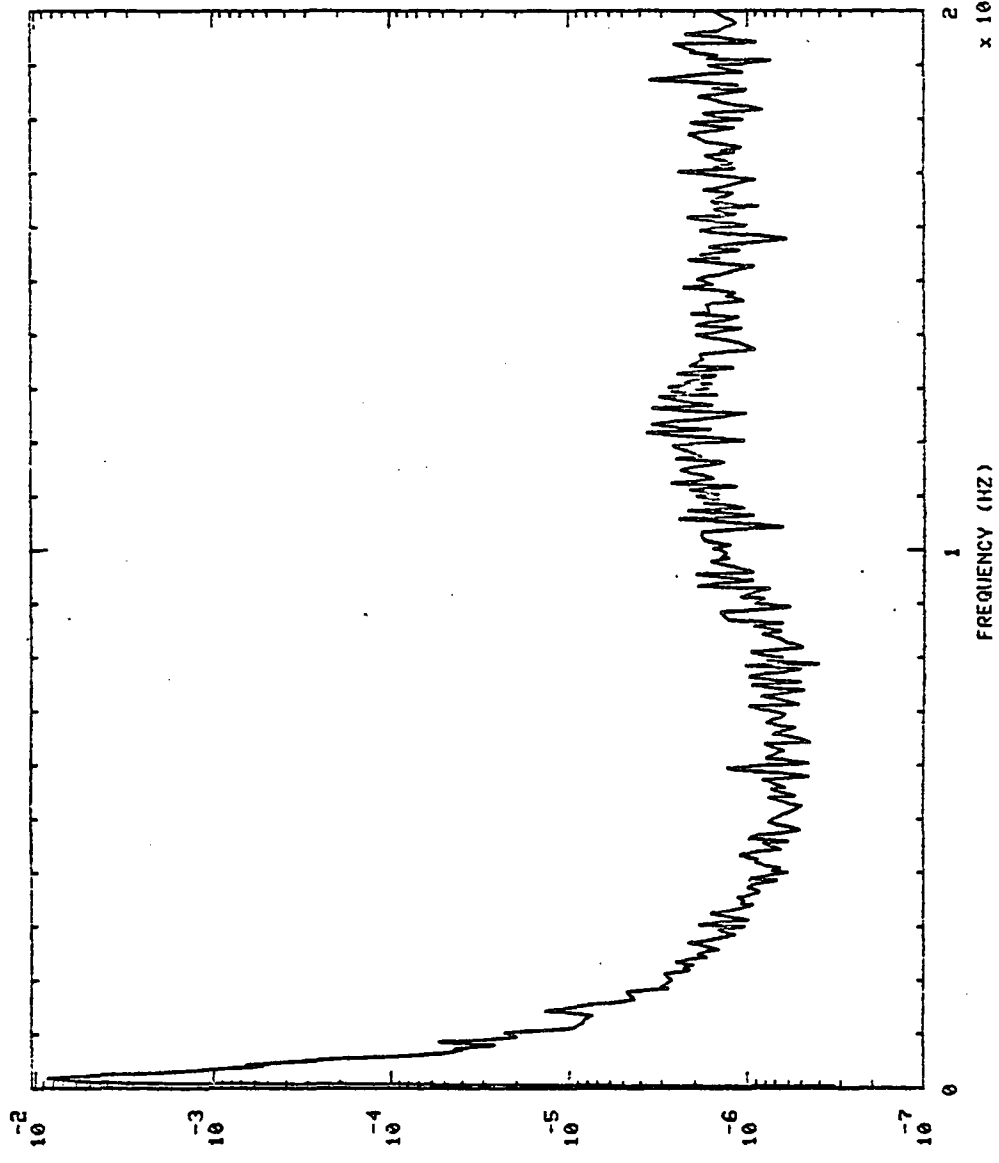
901313 HI LX I PR S+ 4.01H0,'S



P  
S  
D  
/  
H  
Z

901313 HI LX I PR S+ 30.01H0,'S

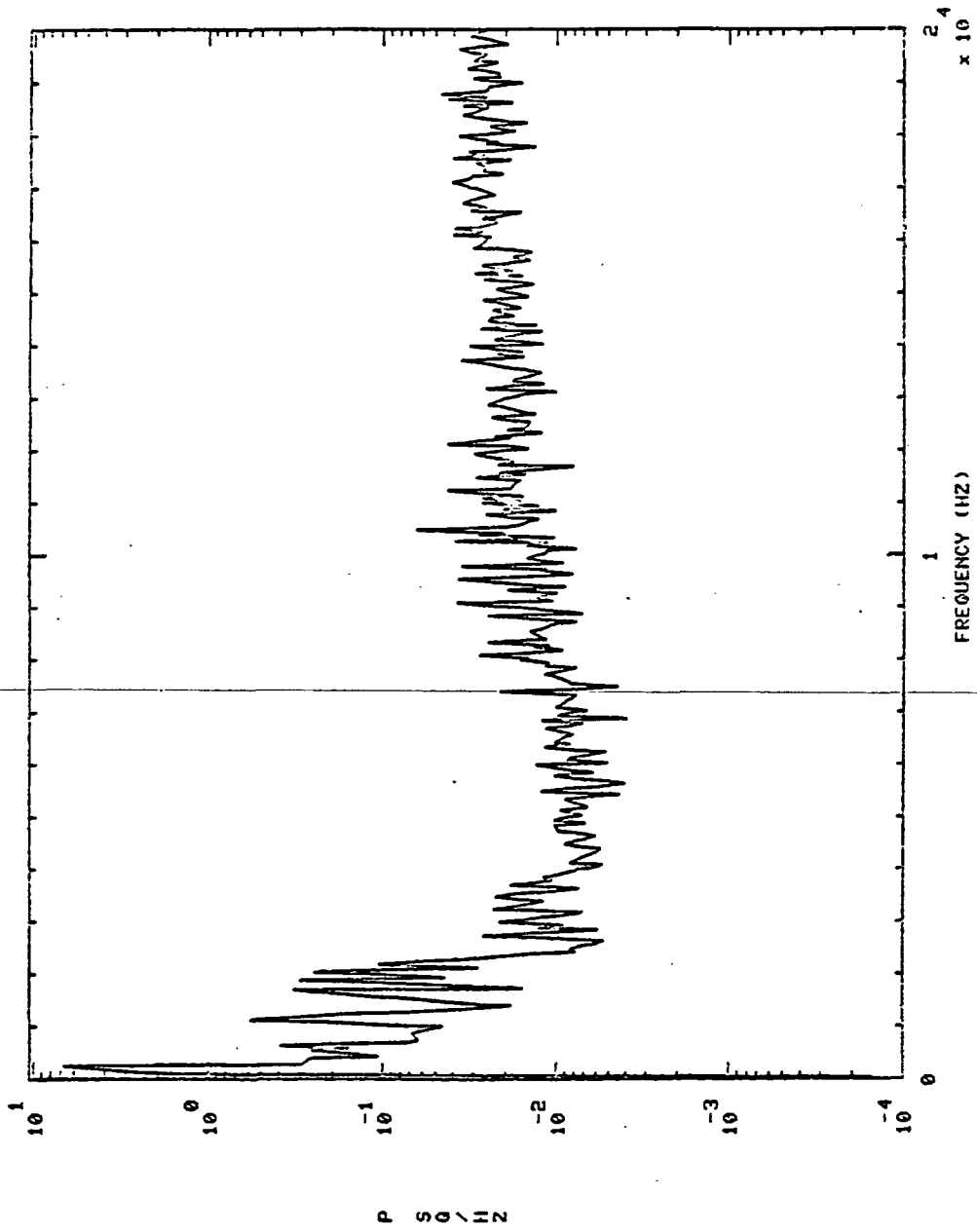
901313 HI LX I PR



P S D \ H Z

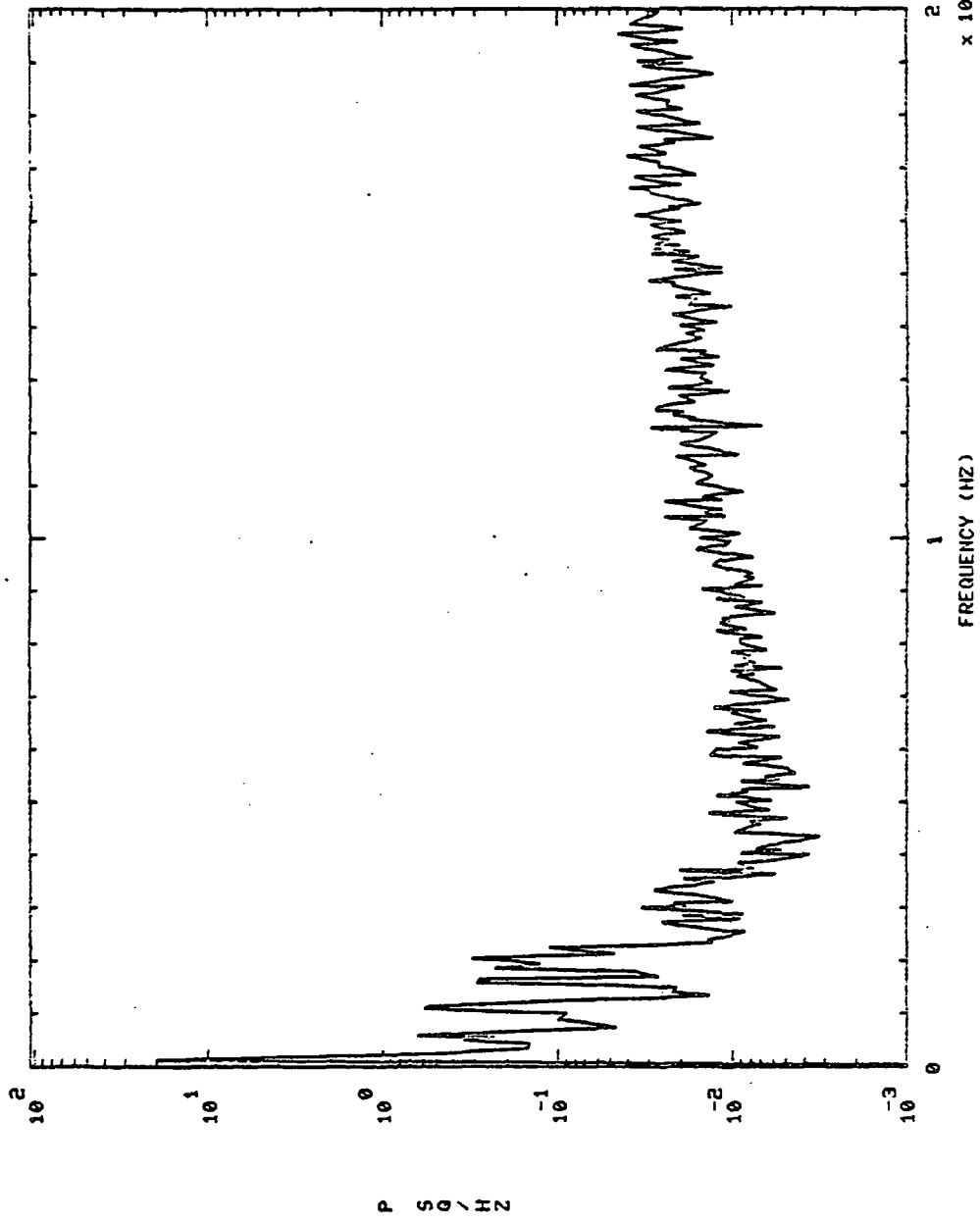
901314 MPOP DS PR S1 6.01HG, 'S

901314 MPOP DS PR



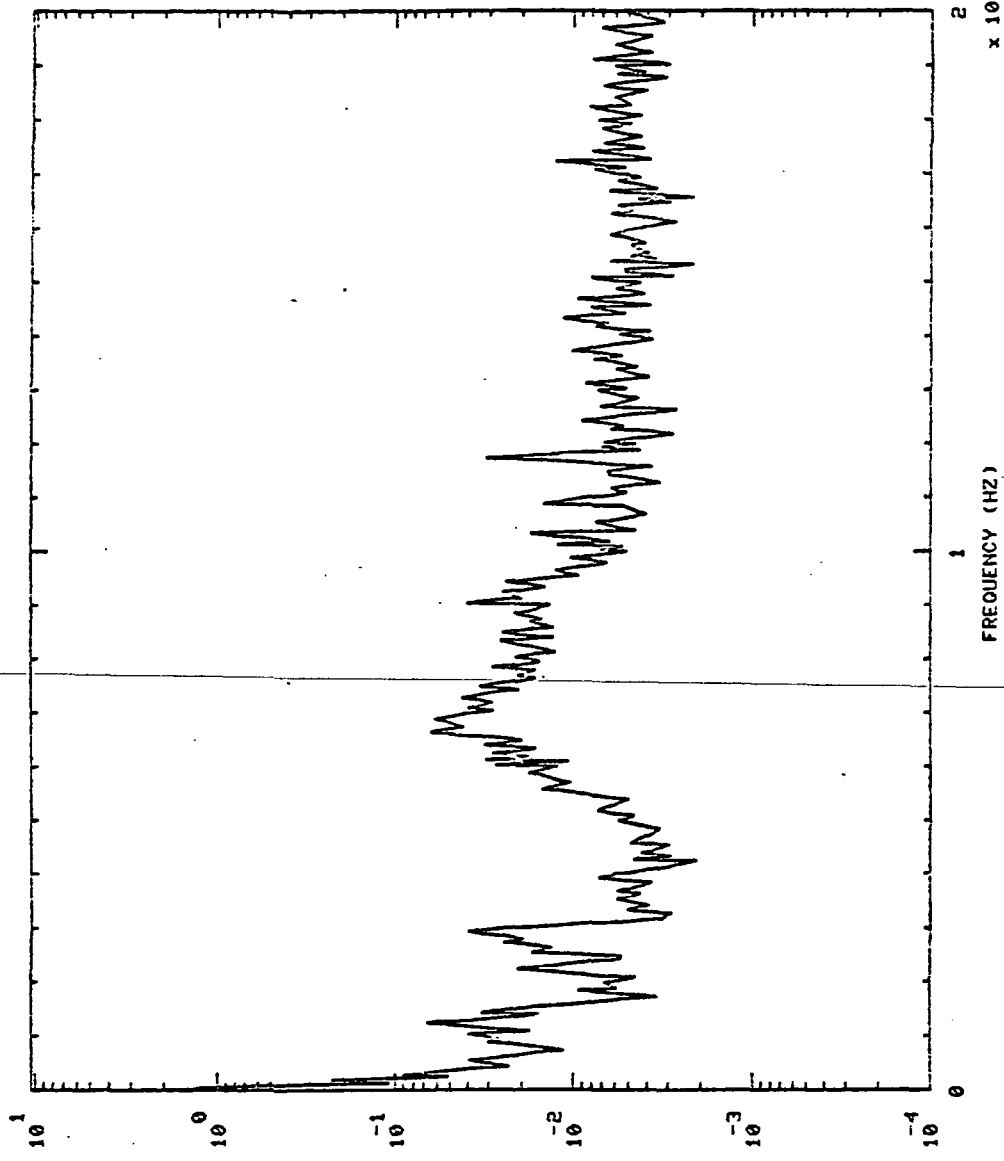
ST 30.01H0,'S

901314 HPOP DS PR





901314 MCC HOT GAS IN PR S+ 6.01110,'S

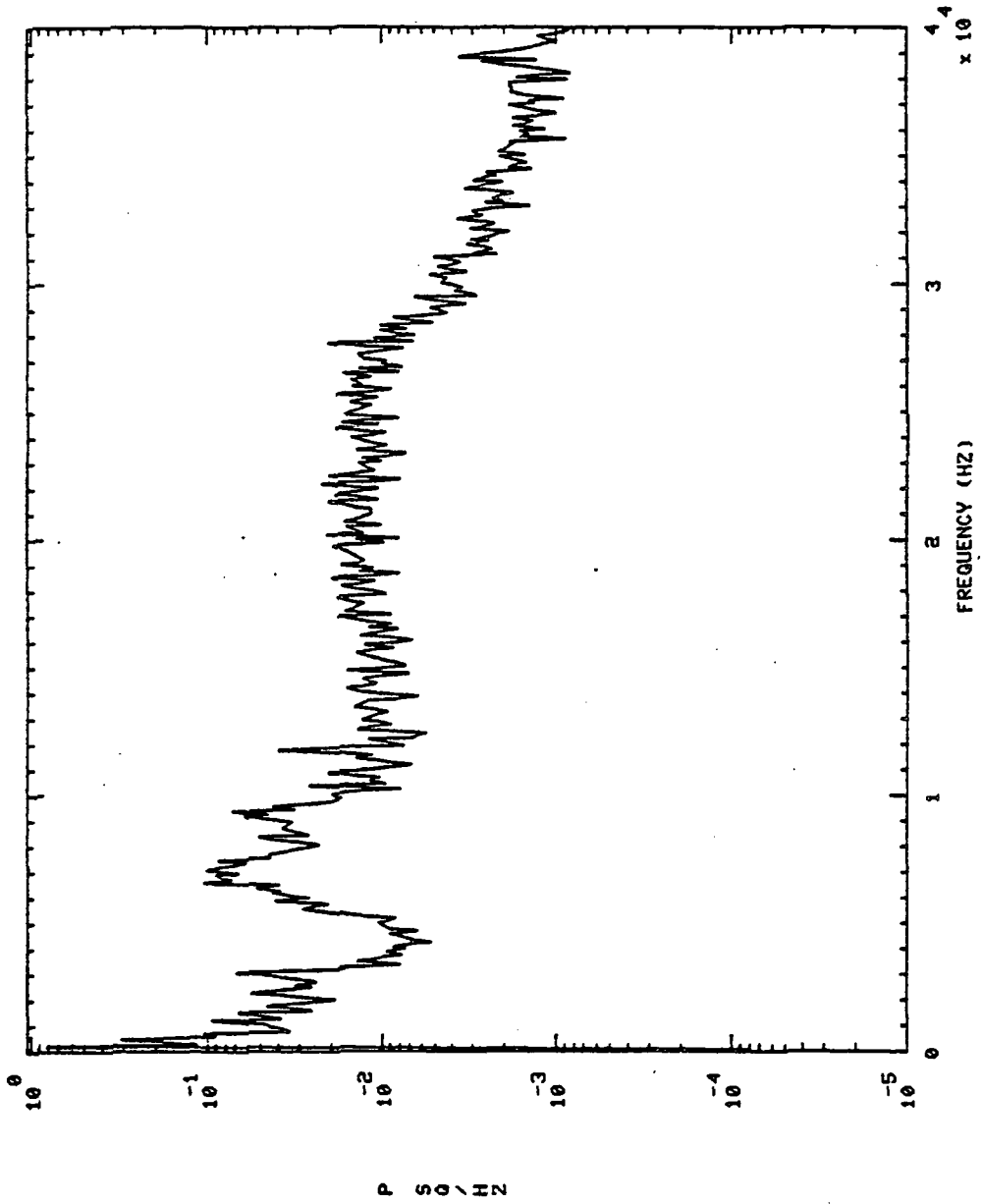


P S \ IN

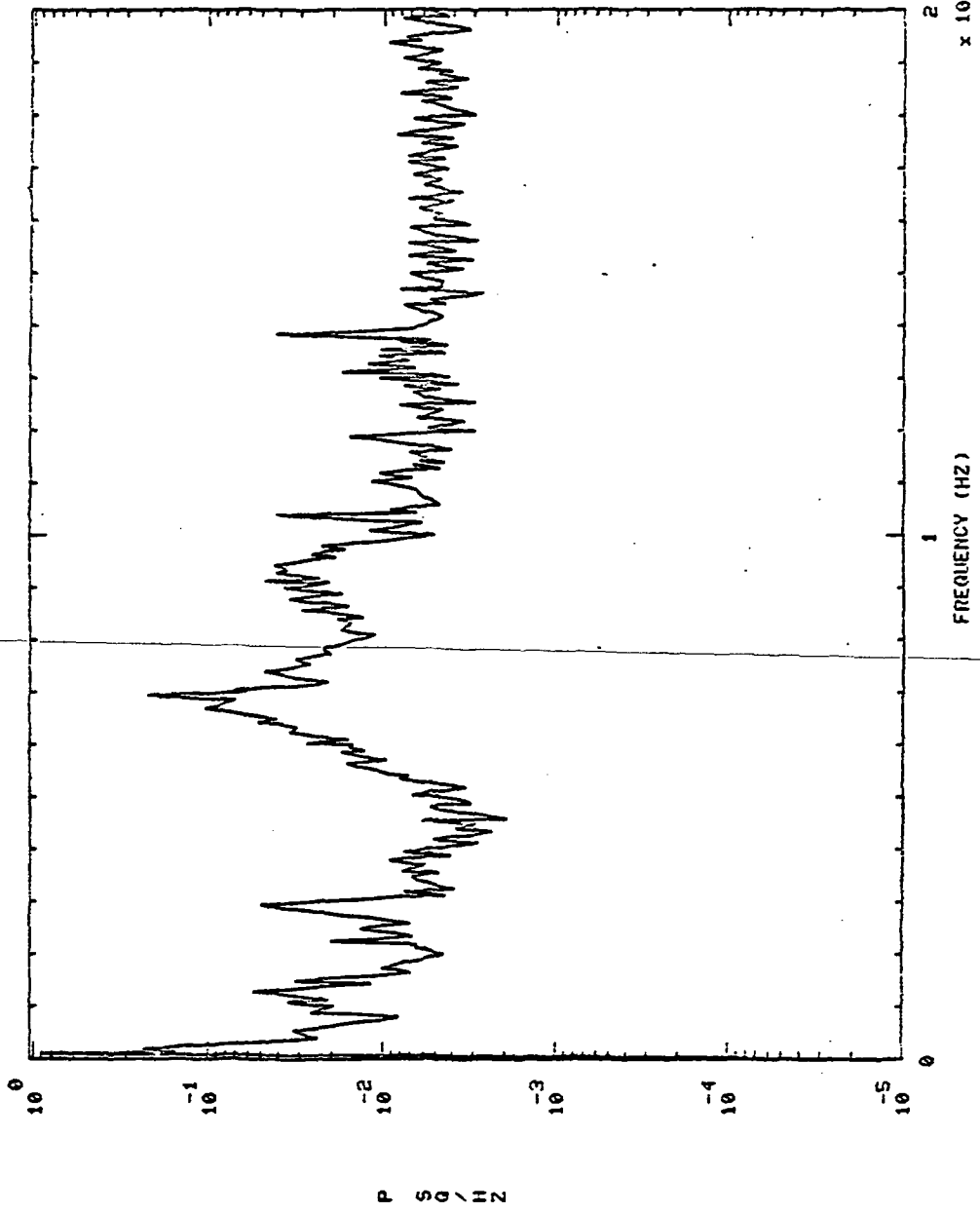
FREQUENCY (HZ)

x 10<sup>4</sup>

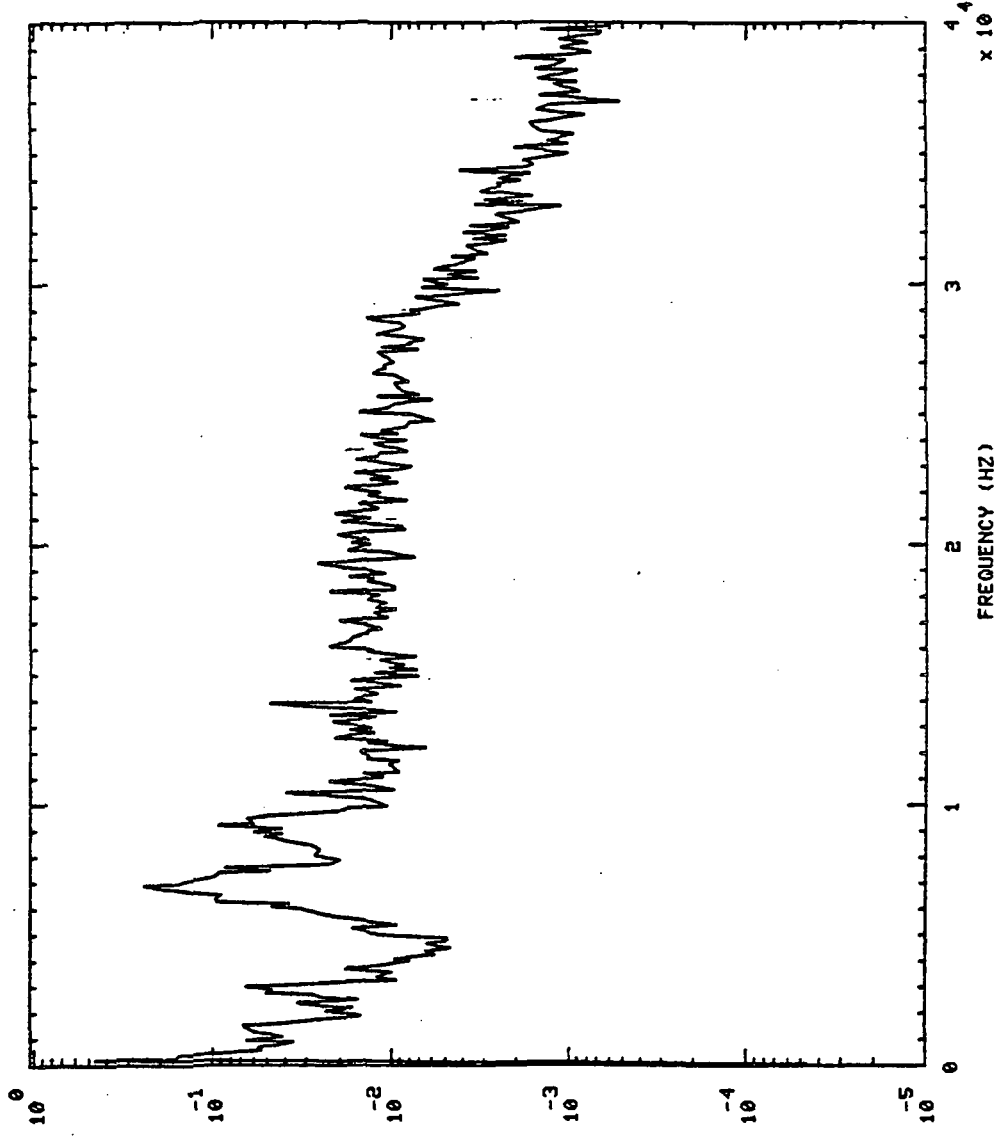
901314 MCC HOT GAS IN PR S+ 6.01H0,'S



901314 MCC HOT GAS IN PR 51 30.01H0,'S



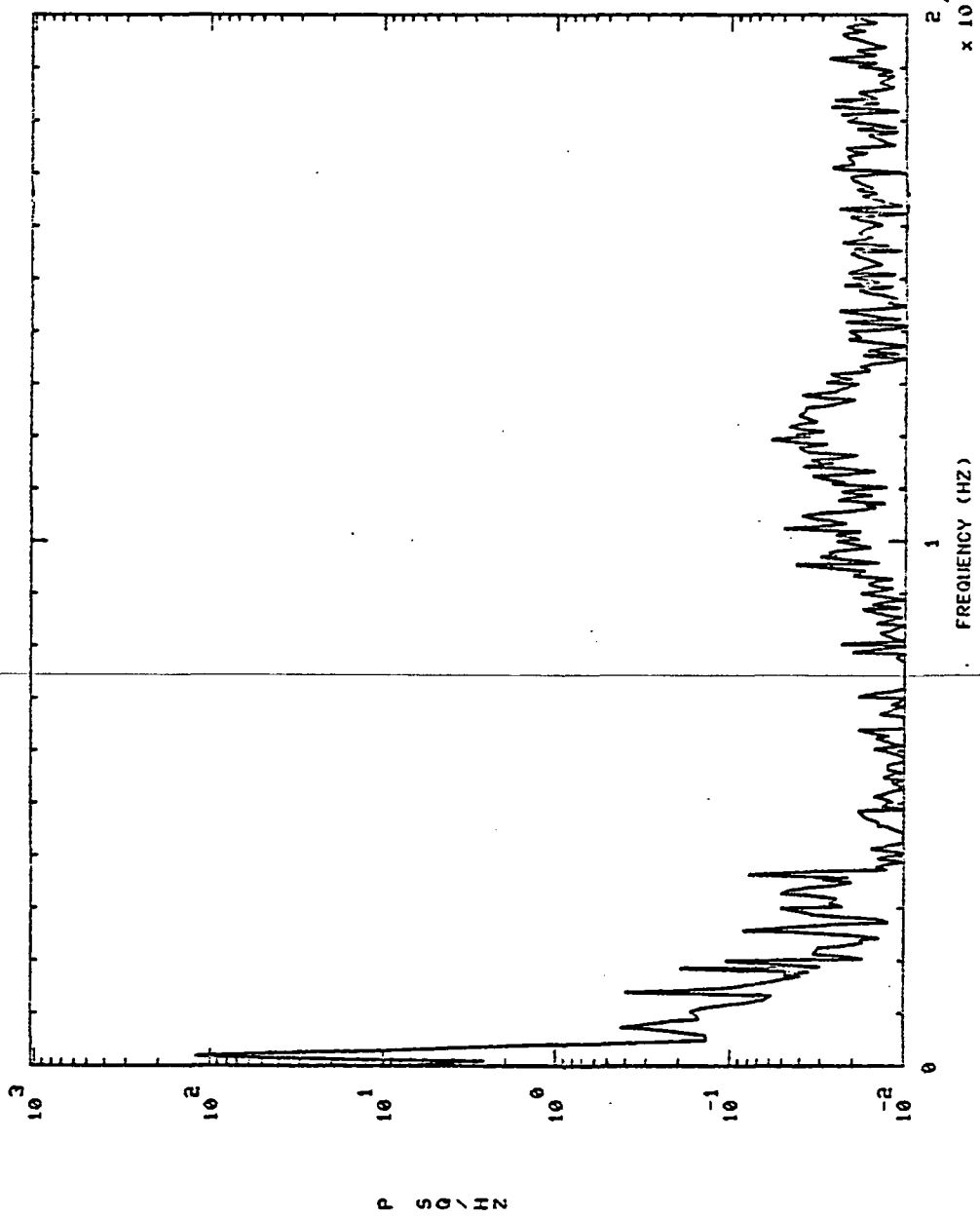
901314 MCC HOT GAS IN PR S+ 30.01H0,'S



P  
S  
Q  
N  
Z

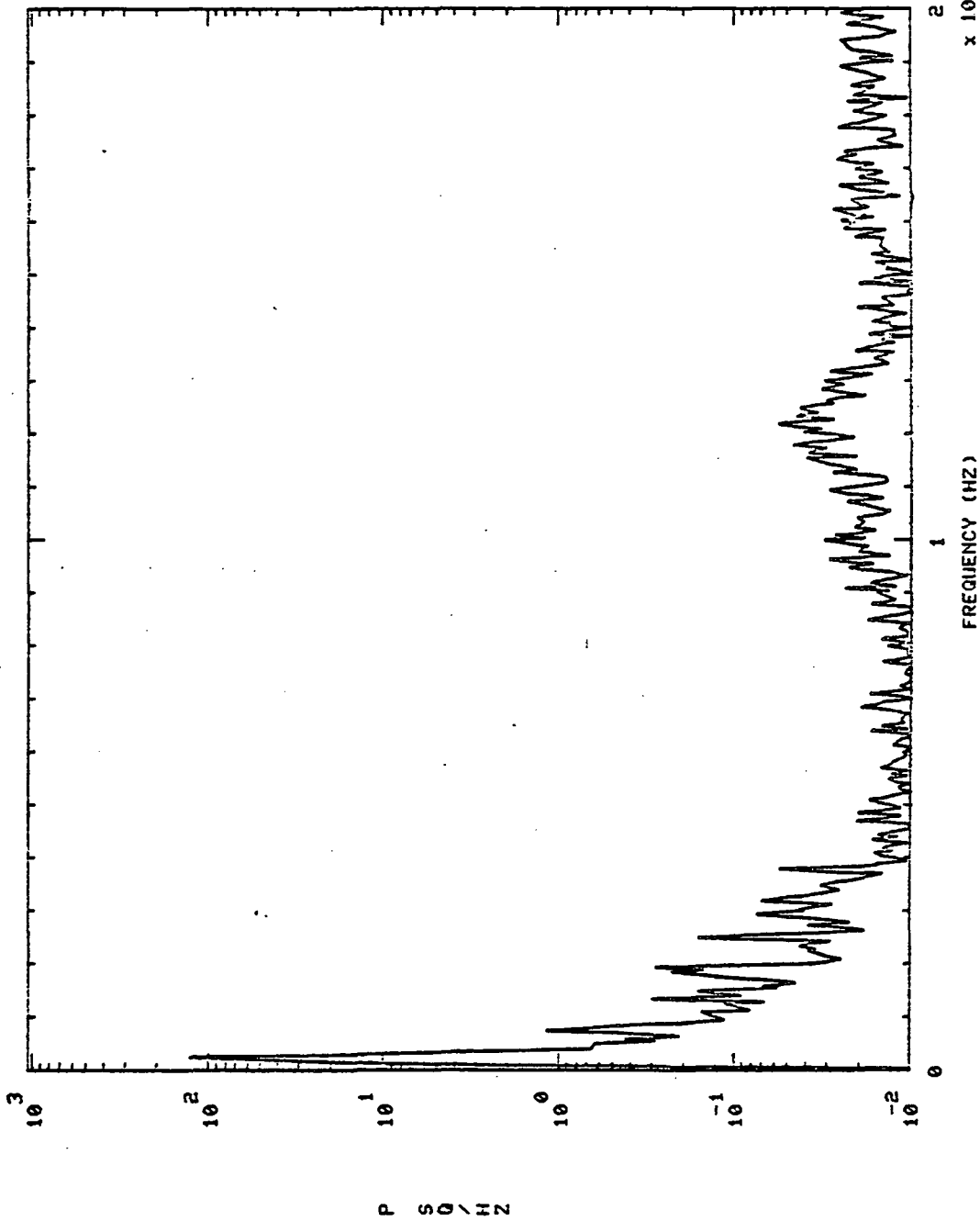
St 6.01110, 'S

901314 PDP DS PR



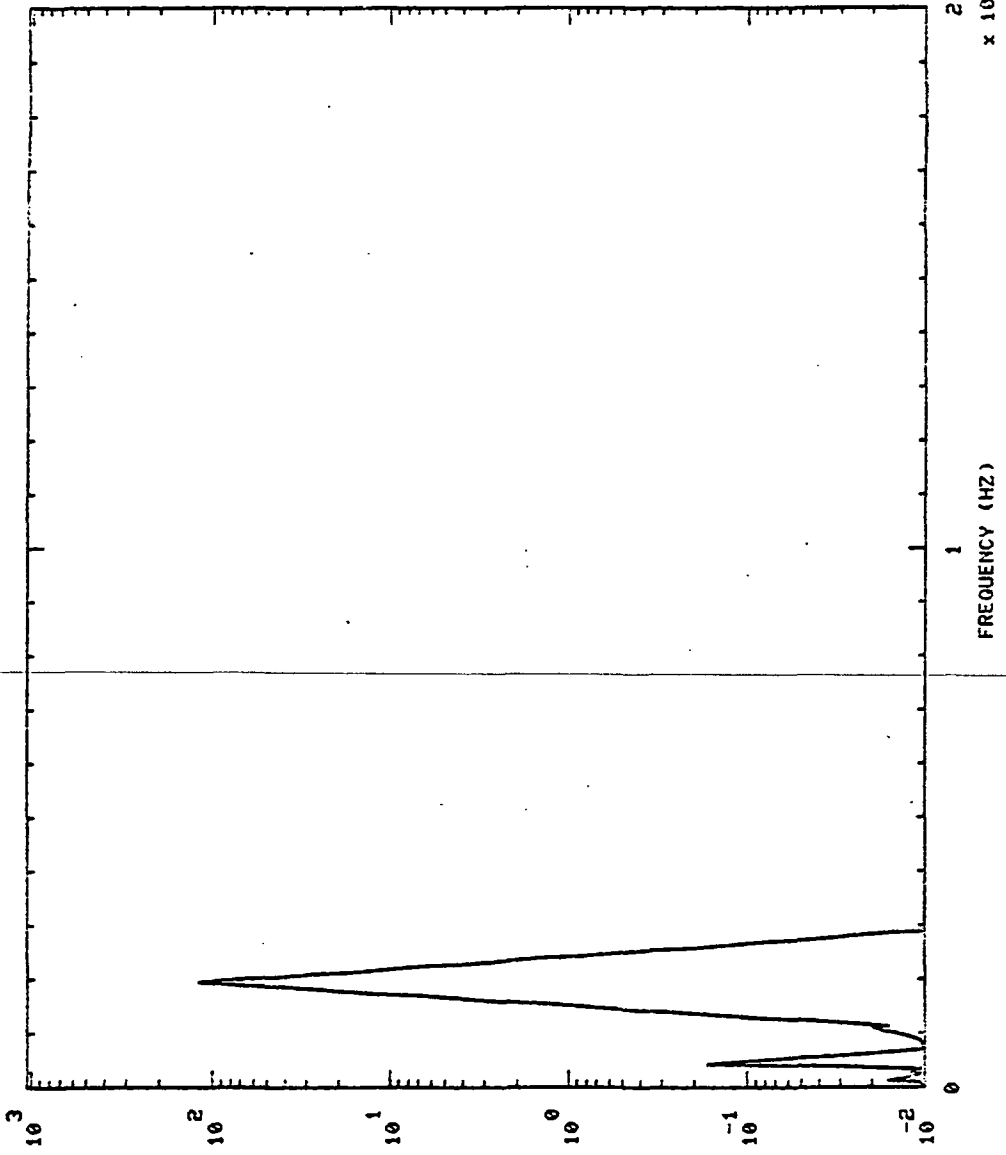
S+ 30.01H0,'S

901314 PBP DS PR



901314 HPOP IN PR S+ 6.01110,'S

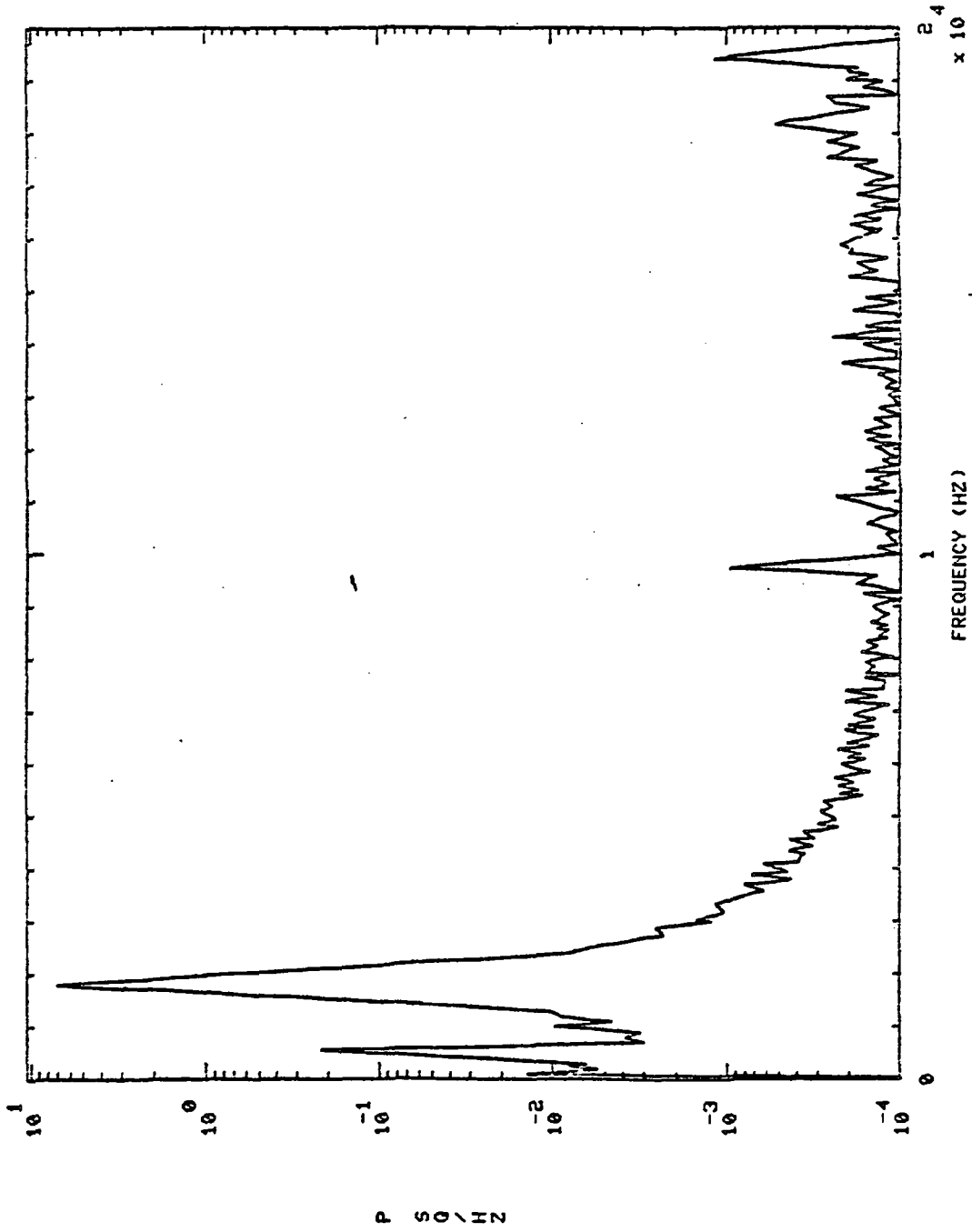
901314 HPOP IN PR



P S Q \ H Z

St 30.0110, 'S

901314 HPOP IN PR

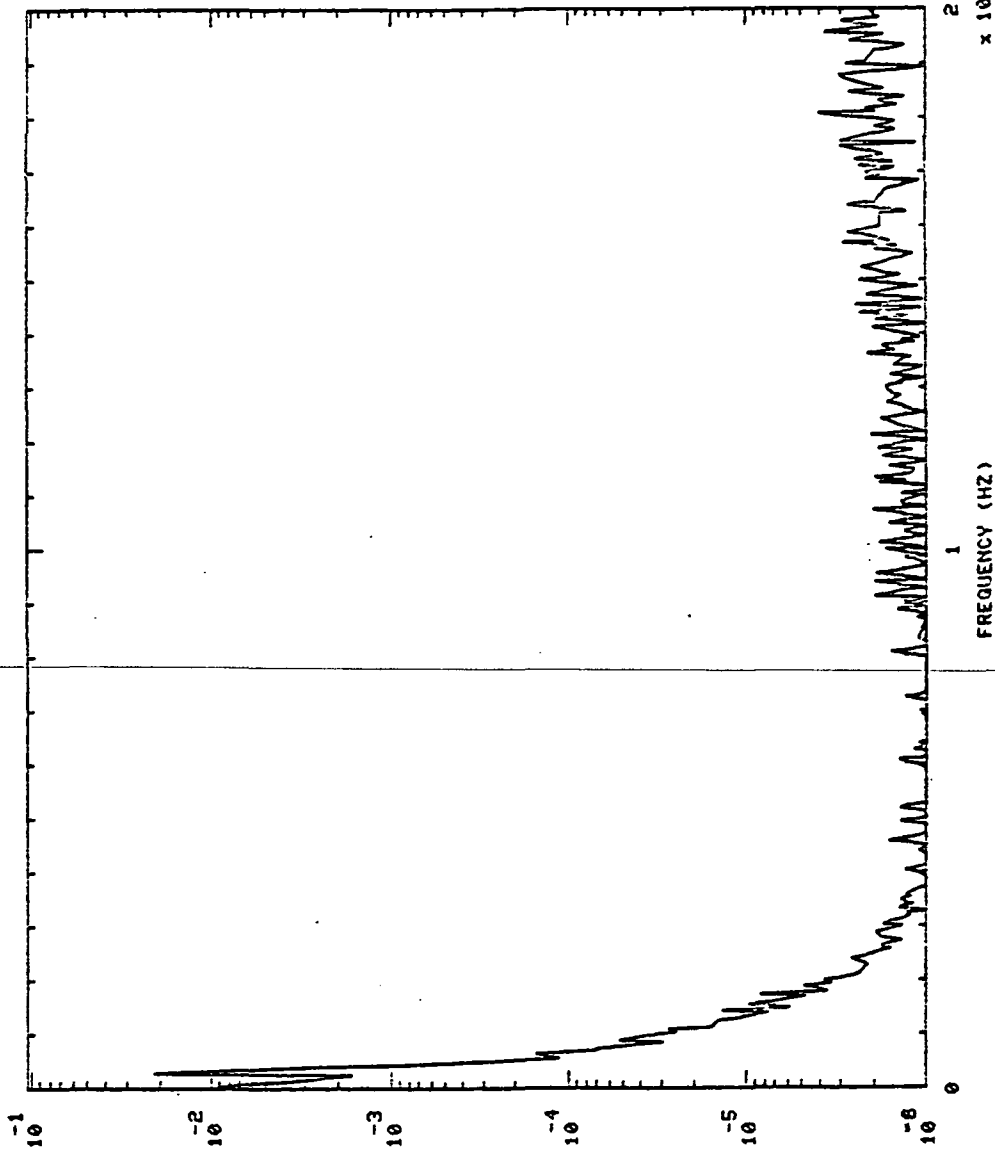


$10^4$   
 $\times 10$

1  
FREQUENCY (HZ)



901314 HI LX I PR 5+ 6.01H0,'S

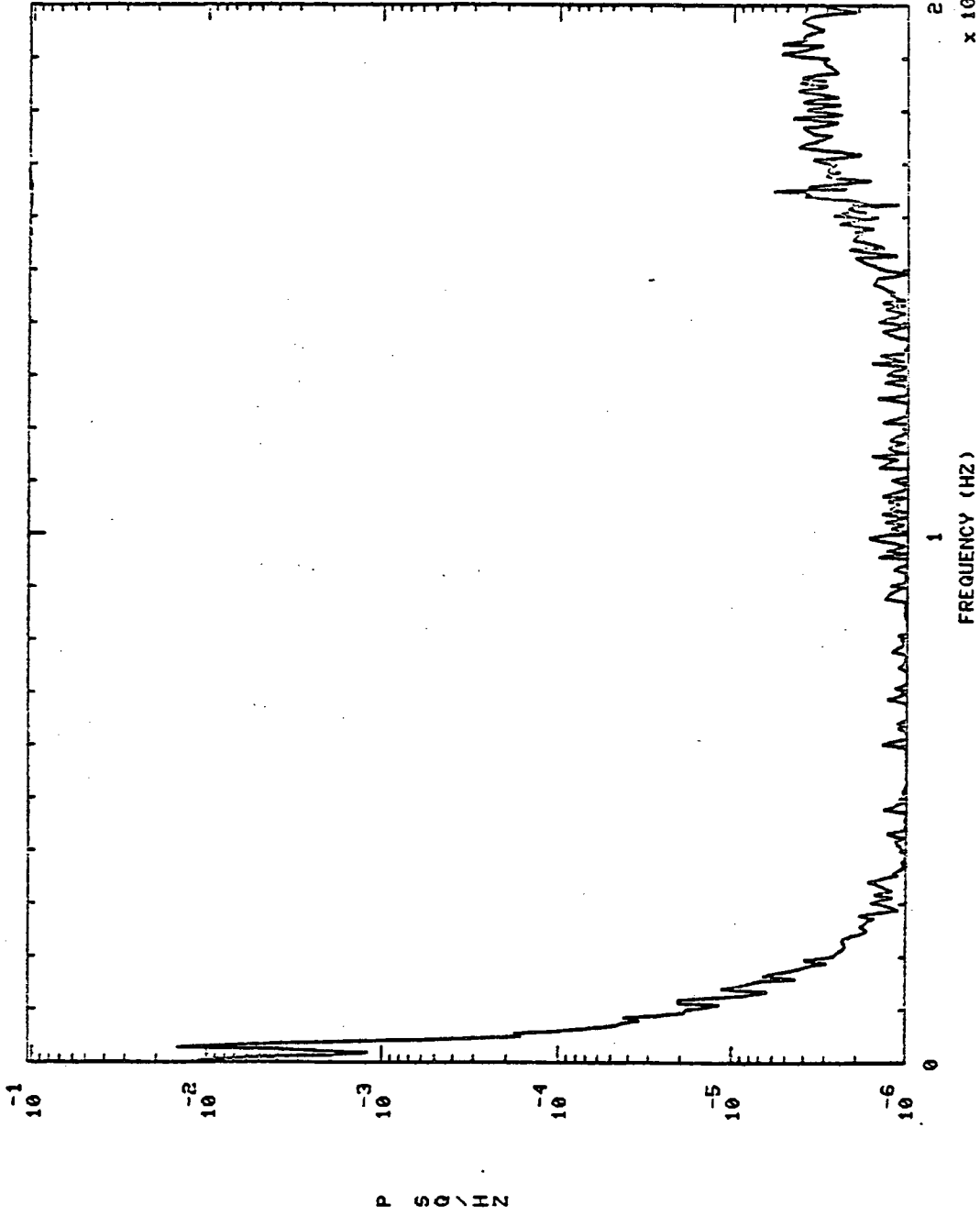


P S D / H Z

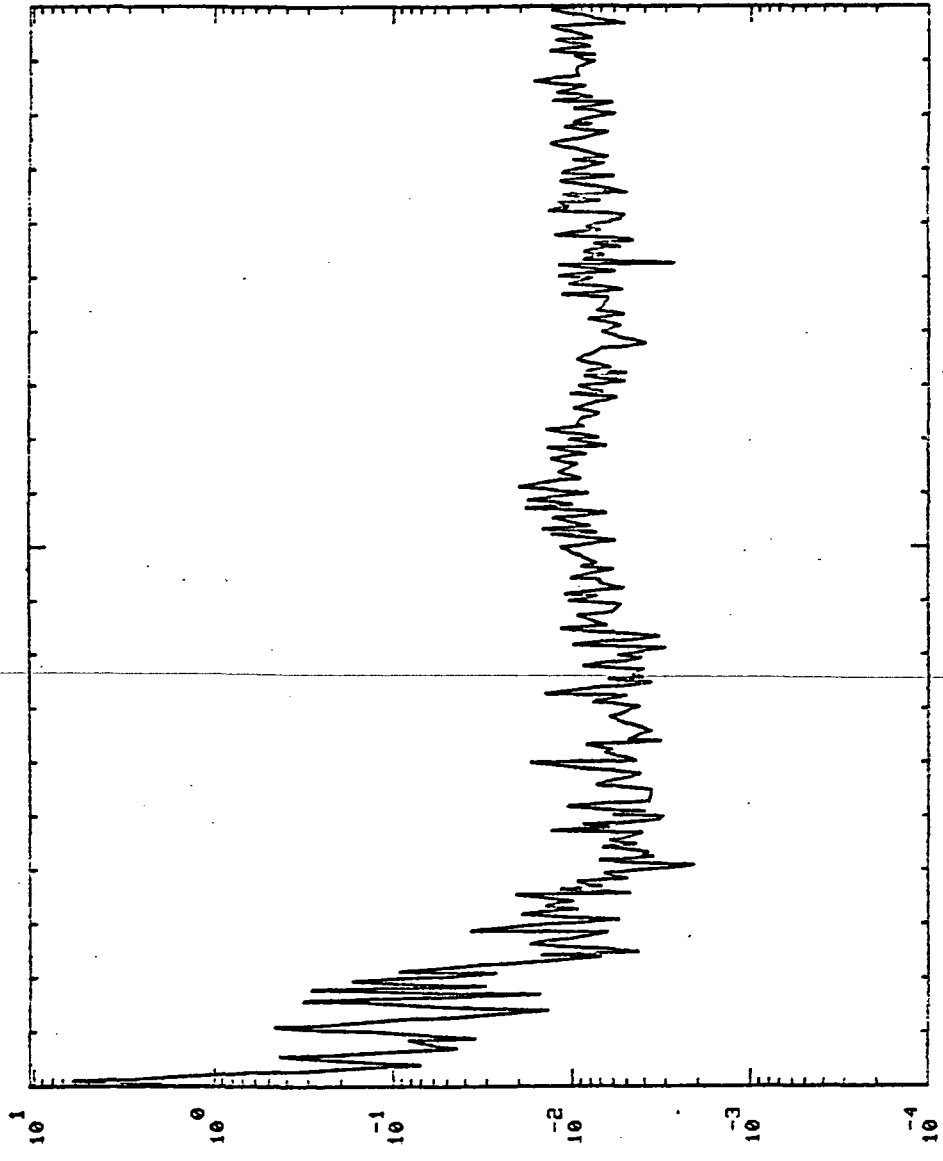
FREQUENCY (HZ)

901314 HI LX I PR St 30.01H0,'S

901314 HI LX I PR



901315 HPOP DS PR S+ 4.01H0,'S



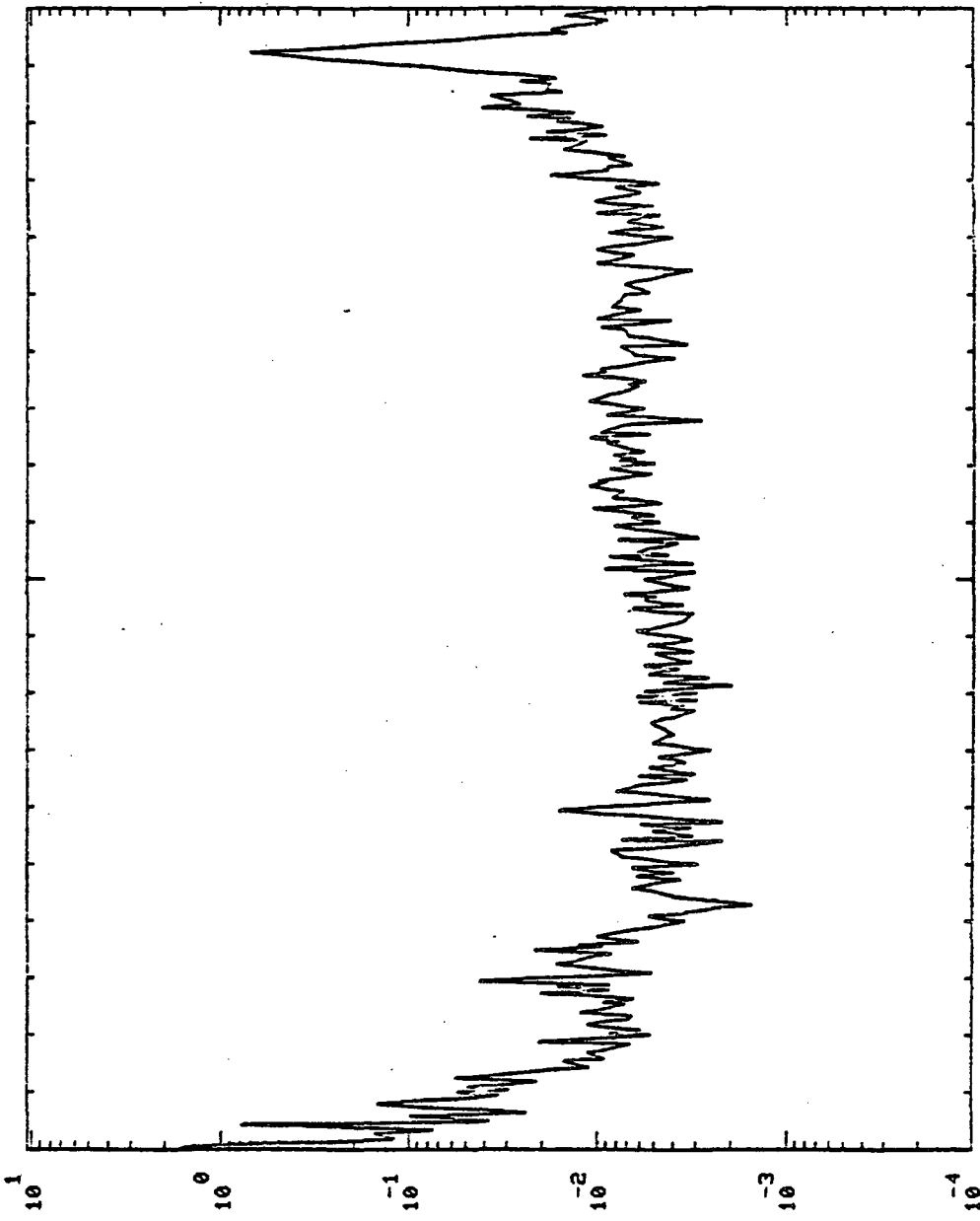
P SQ/HZ

FREQUENCY (HZ) x 10<sup>4</sup>

901315 HP0P DS PR S+ 30.01H0,'S

901315 HP0P DS PR

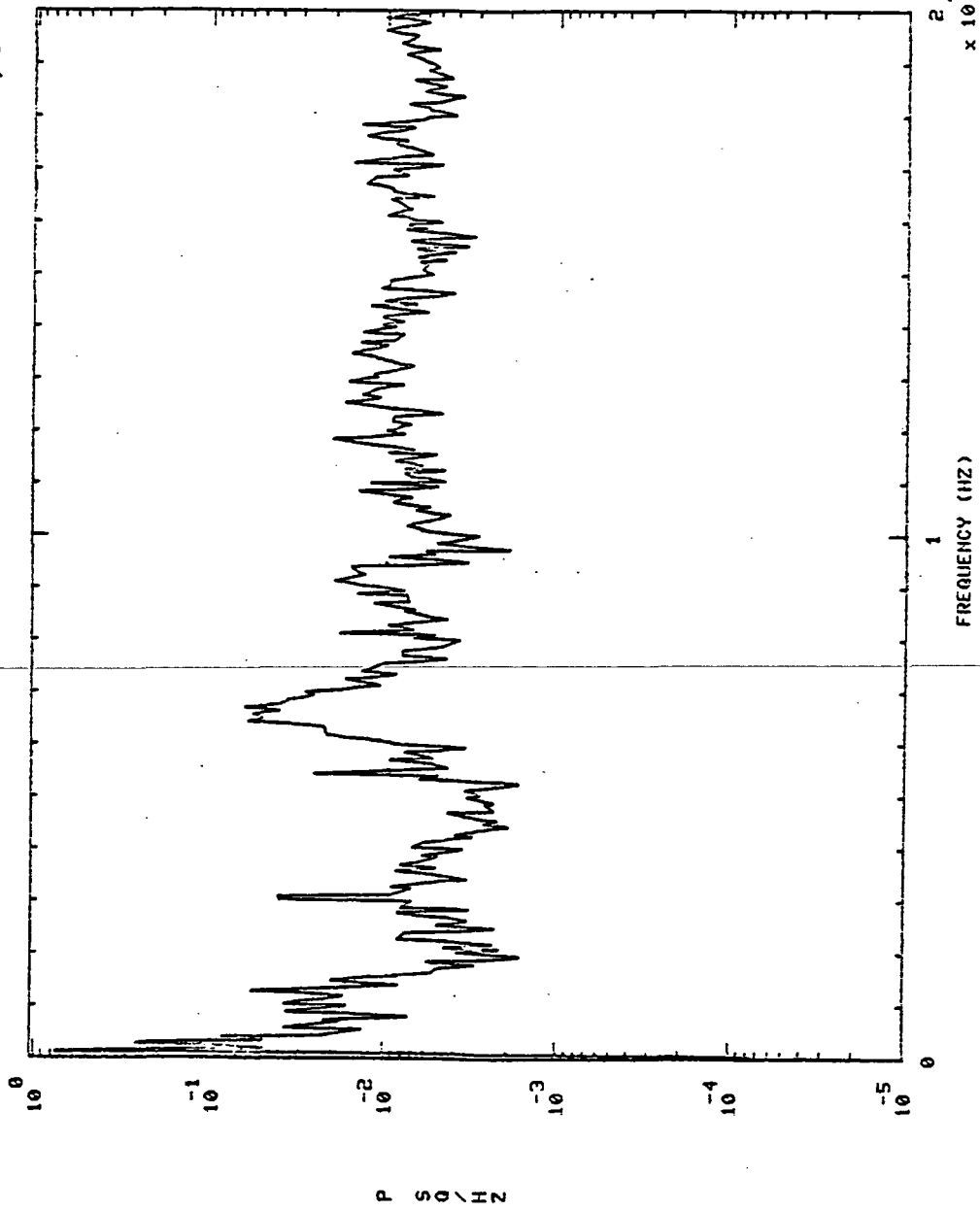
901315



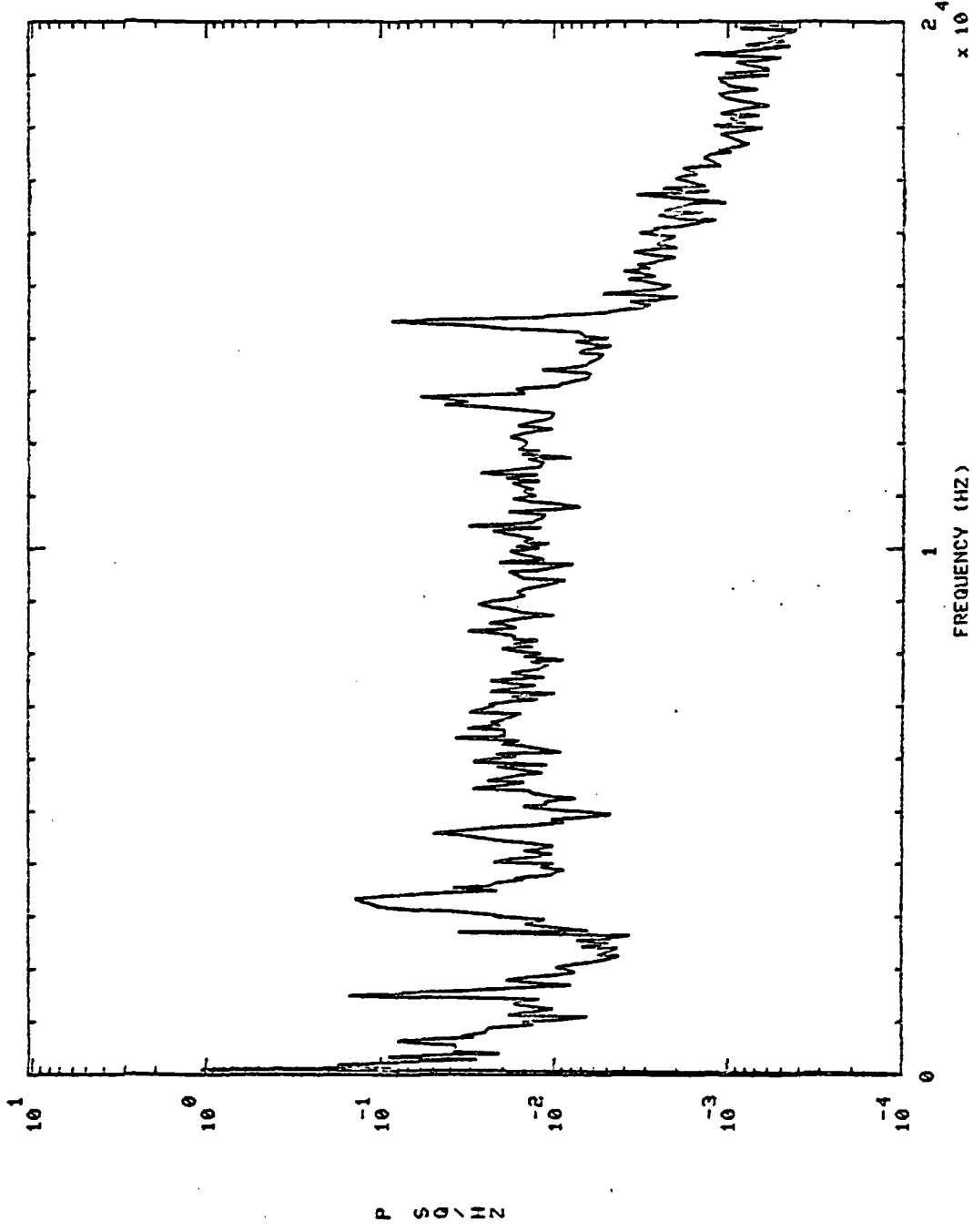
P S D \ HZ

FREQUENCY (HZ)  $\times 10^4$

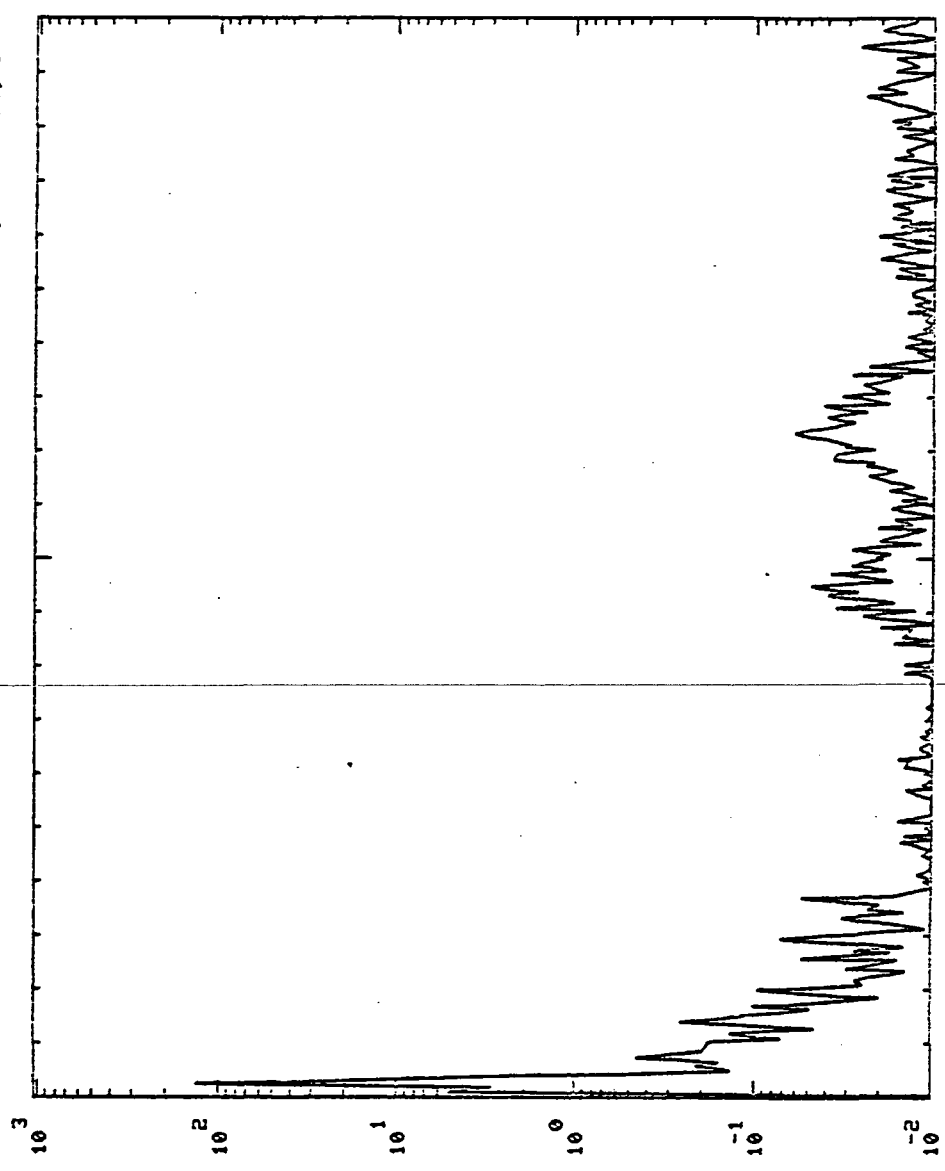
901315 MCC HOT GAS IN PR ST 30.01H0,'S



901315 MCC HOT GAS IN PR 5+ 60.01H0,'S



901315 PBP DS PR S1 4.01H0,'S

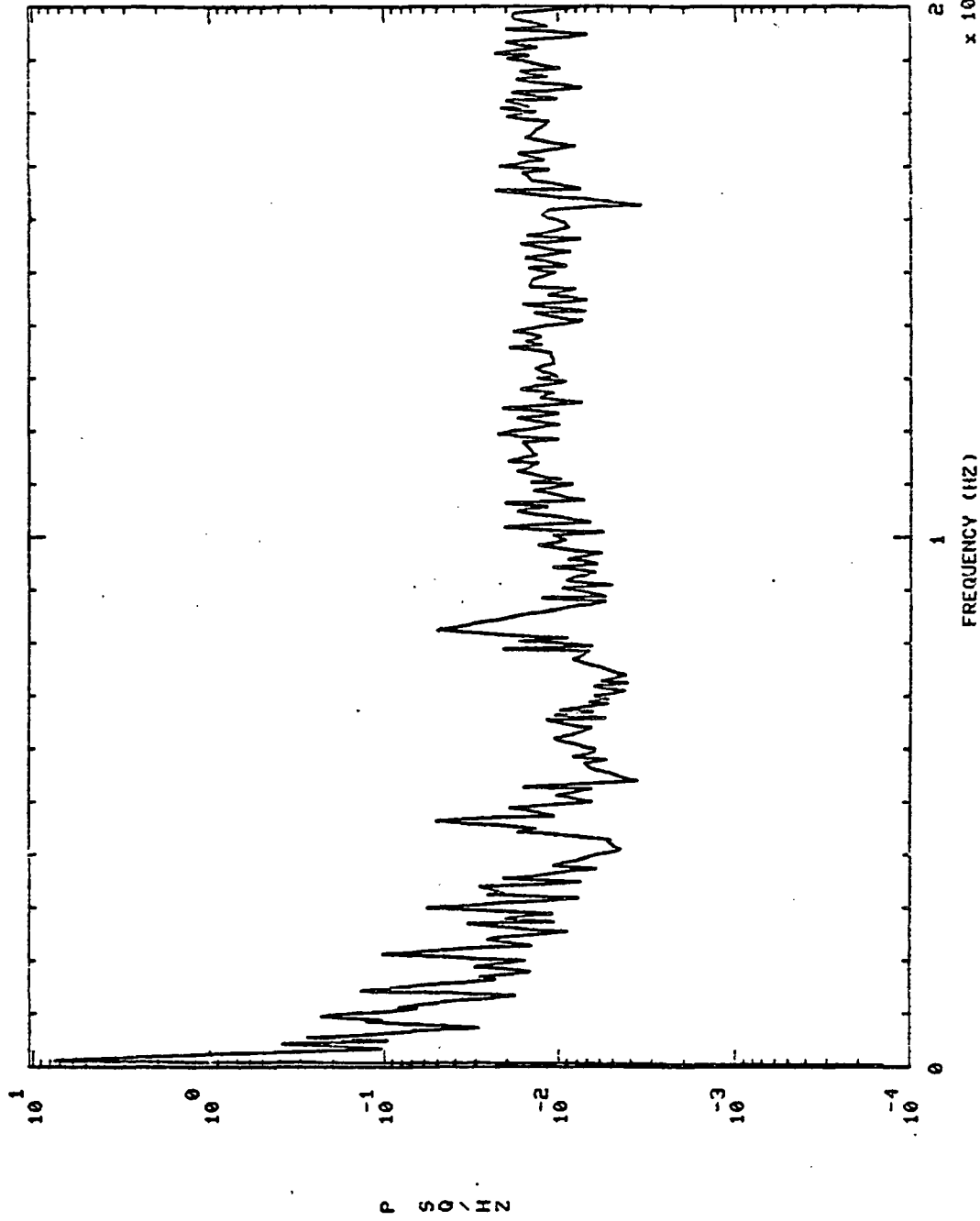


P S O / H Z

FREQUENCY (HZ) x 10<sup>4</sup>

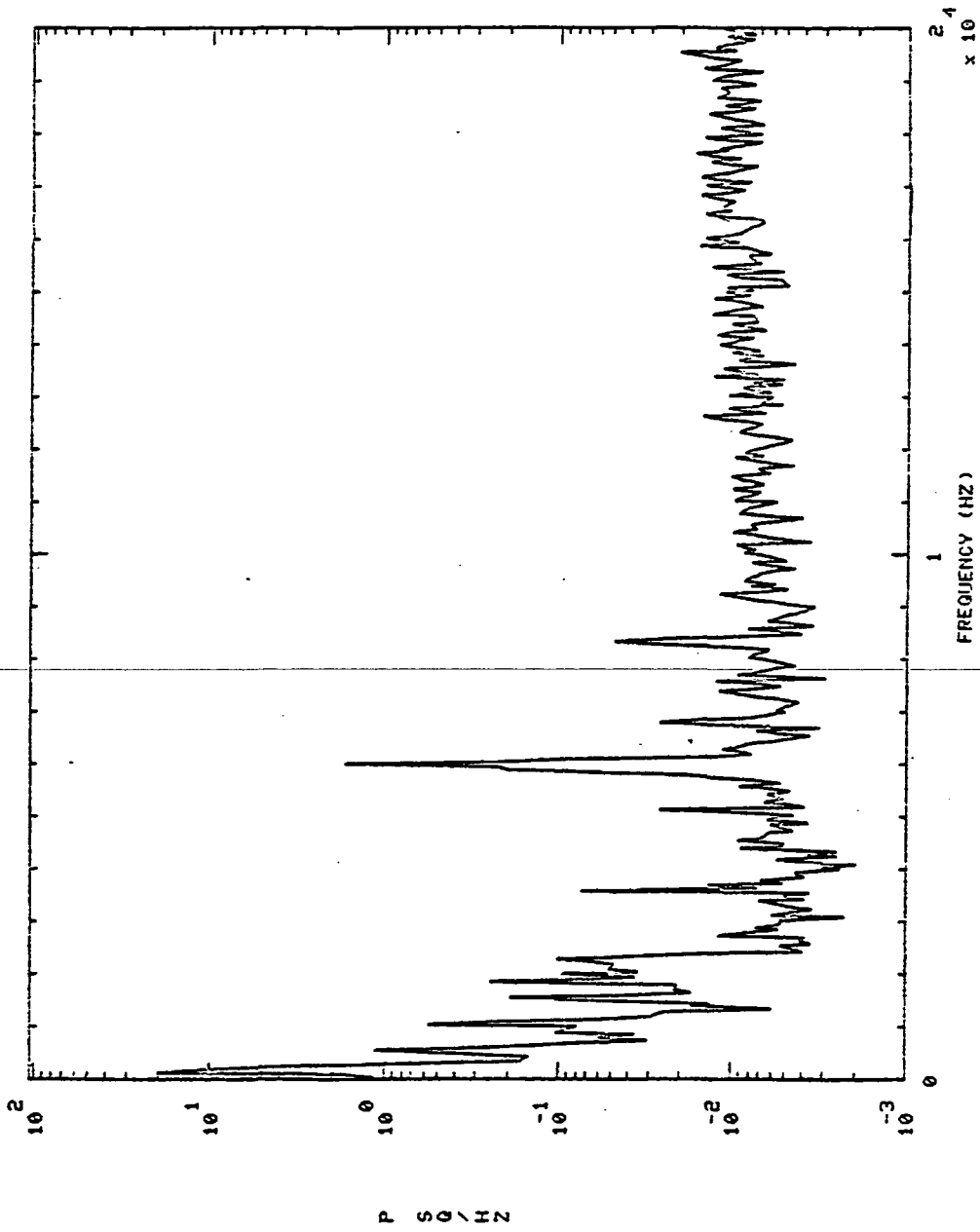
St 30.01H0.'S

901315 PBP DS PR



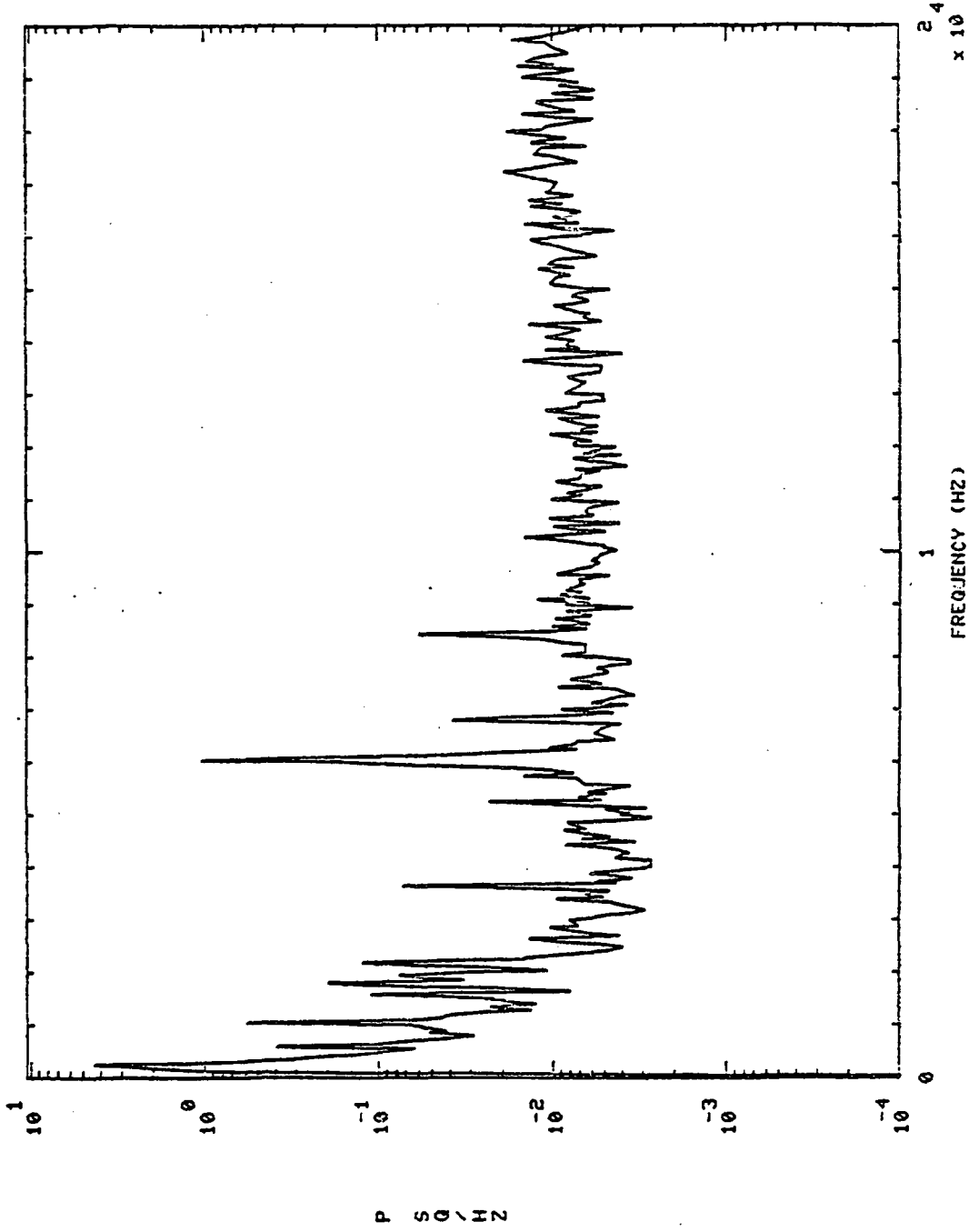


901316 HPOP D5 PR S+ 4.0JHD,'S

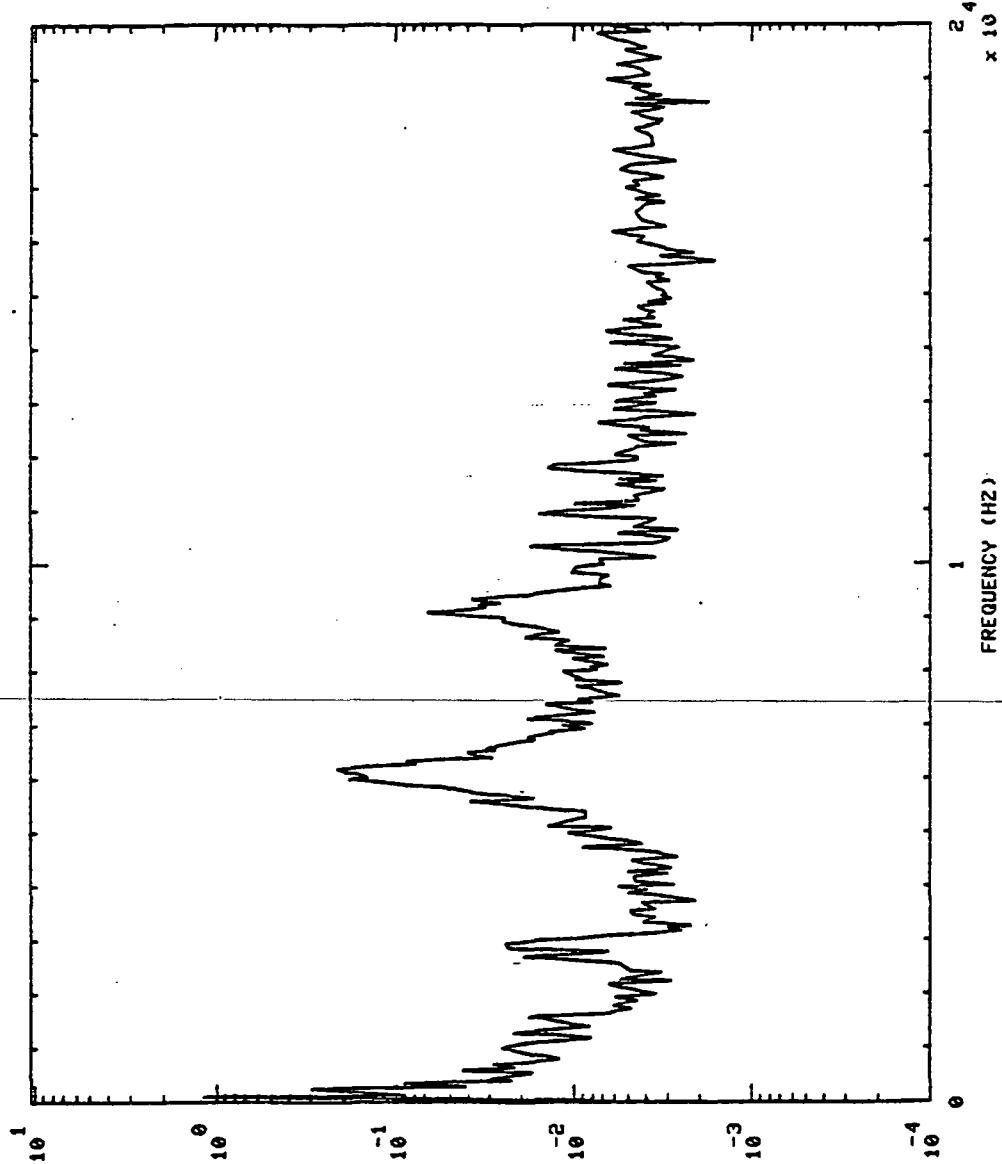


ST 11.01H0,'S

901316 HPOP DS PR



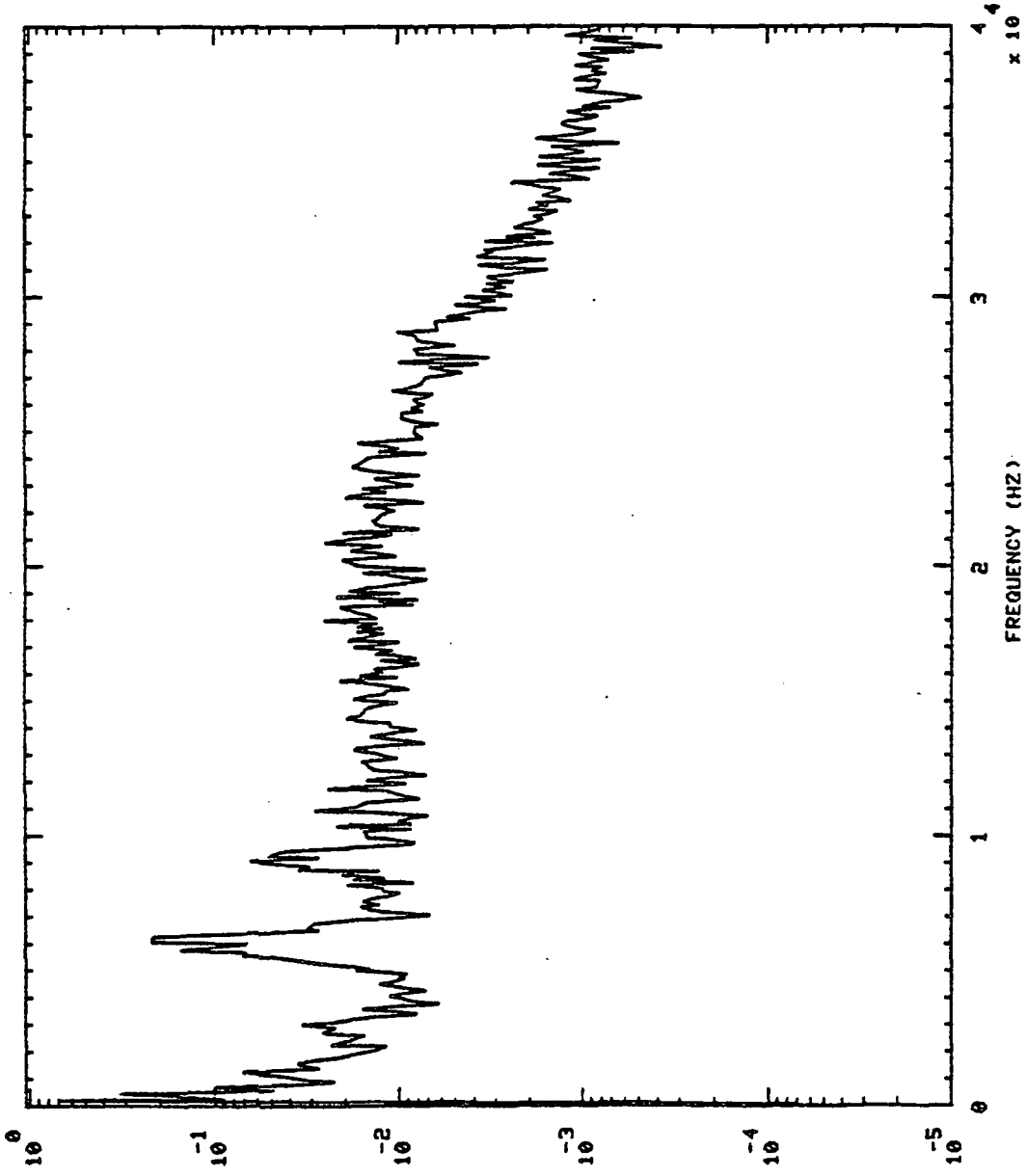
901316 MCC HOT GAS IN PR S+ 4.01H0,'S



P S D / H Z

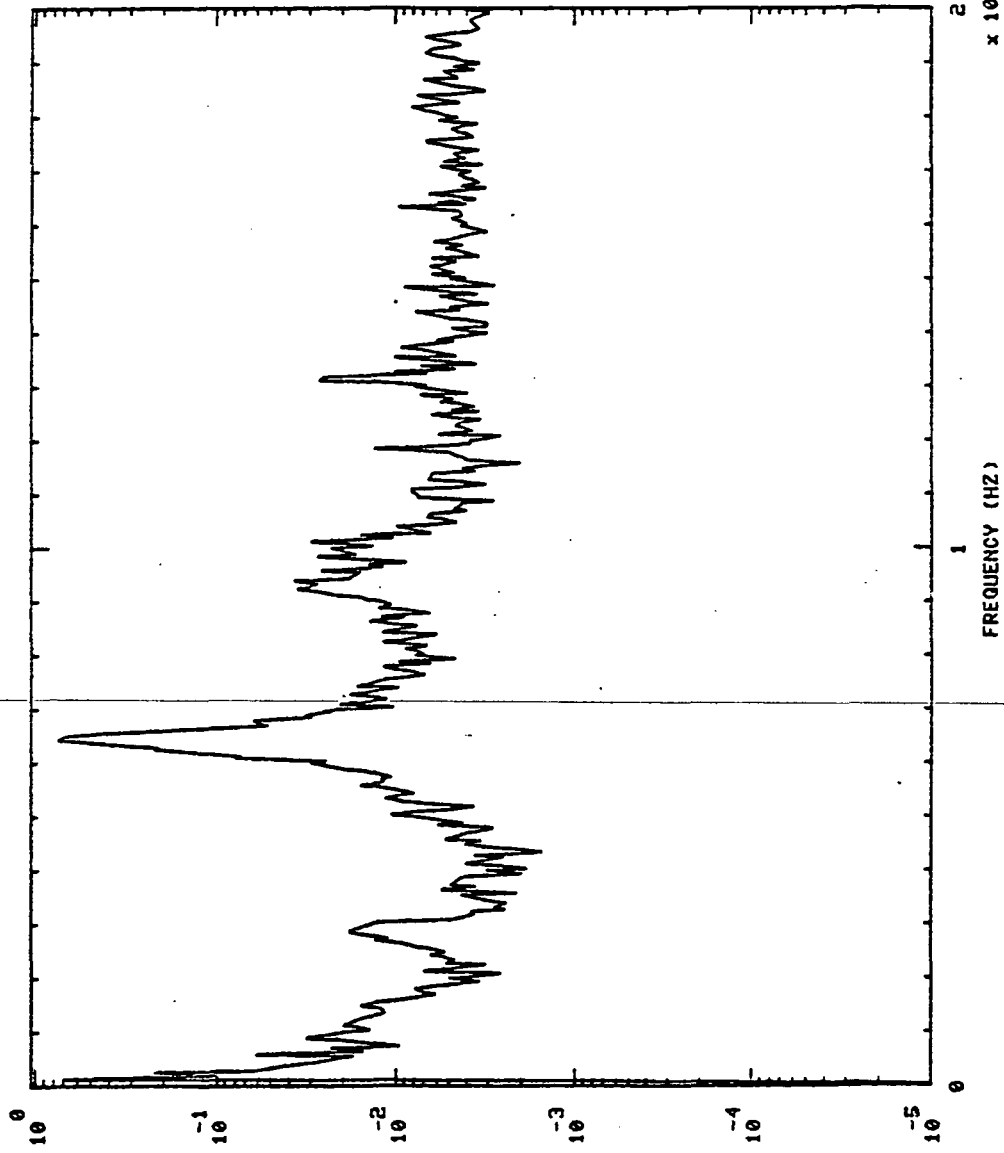
FREQUENCY (HZ) x 10<sup>4</sup>

901316 MCC HOT GAS IN PR S+ 4.01H0,'S



901316 MCC HOT GAS IN PR S+ 11.01NO,'S

901316 MCC HOT GAS IN PR

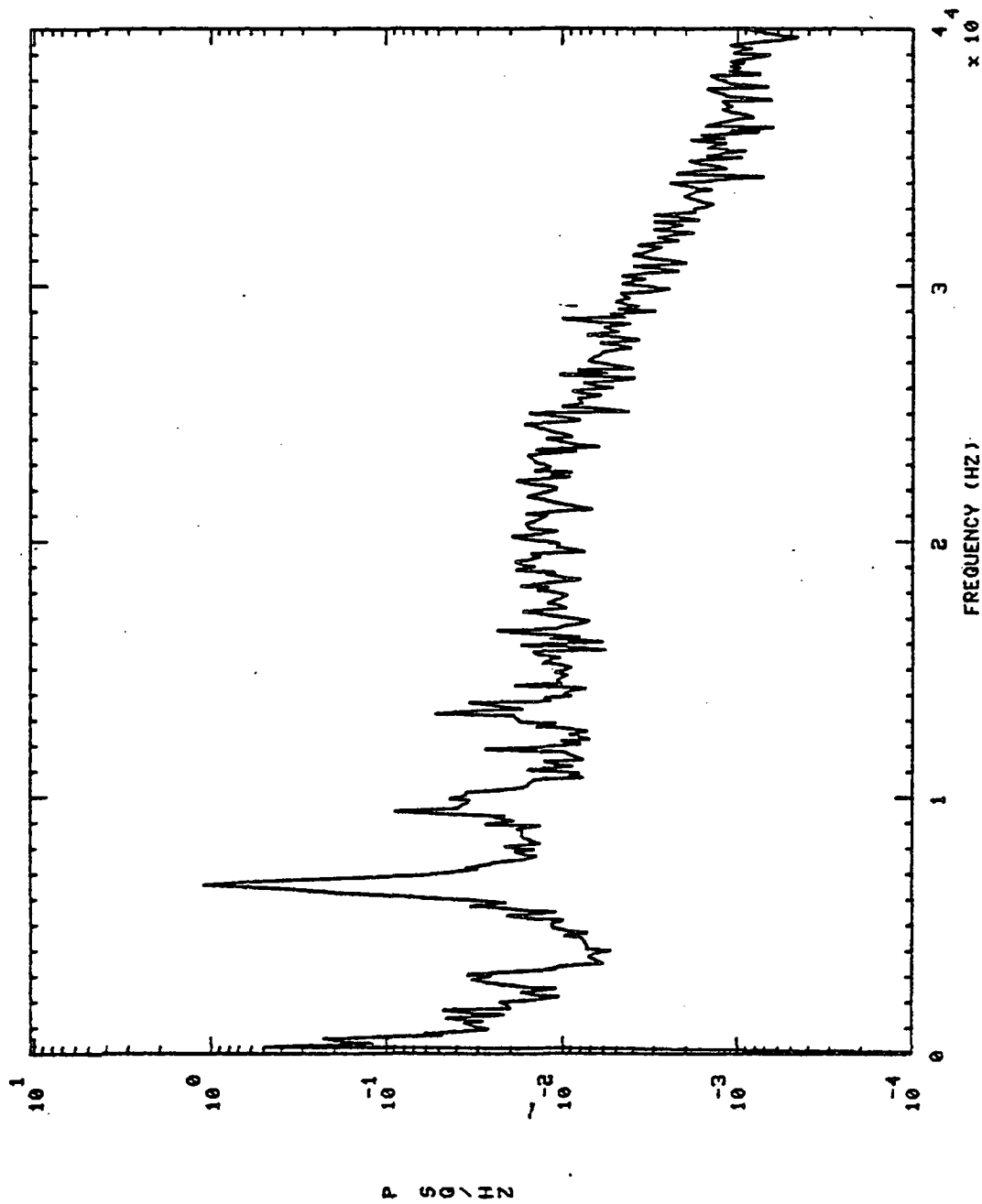


P S O / H 2

FREQUENCY (HZ)

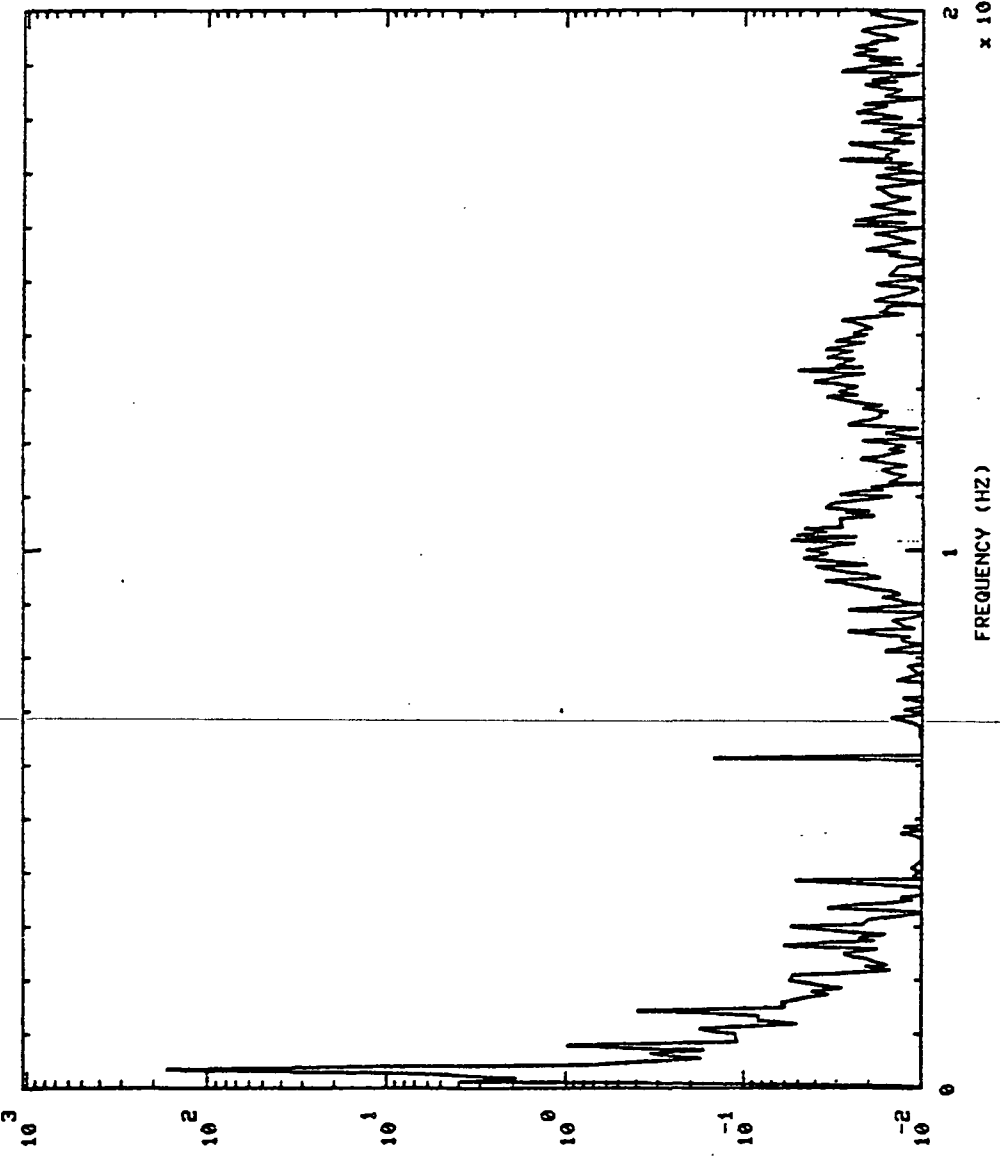
$\times 10^4$

901316 MCC HOT GAS IN PR S+ 11.01H0,'S



S+ 4.0140,'S

901316 PBP DS PR



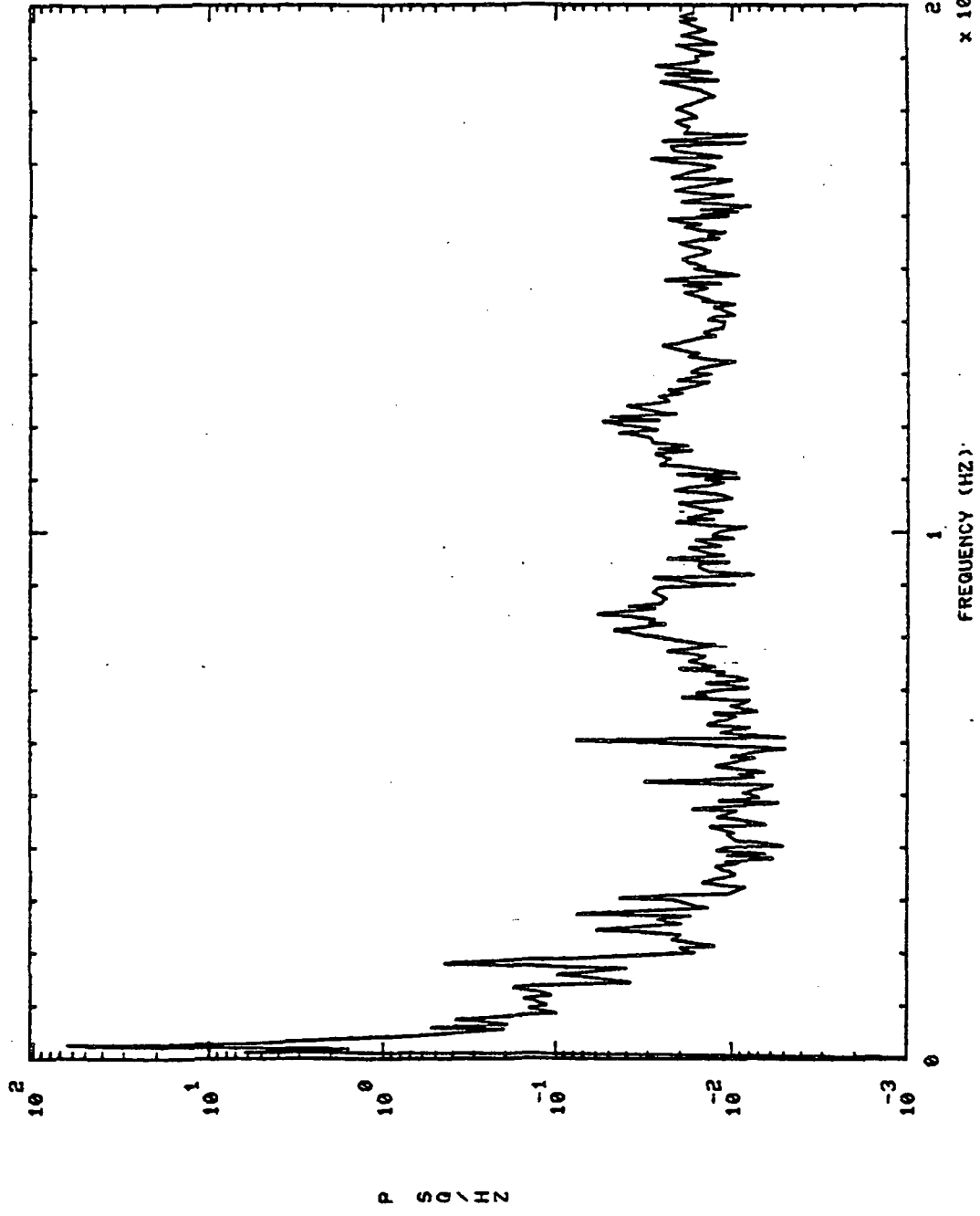
P S D / H Z

FREQUENCY (HZ)

x 10<sup>4</sup>

S+ 11.01H0,'S

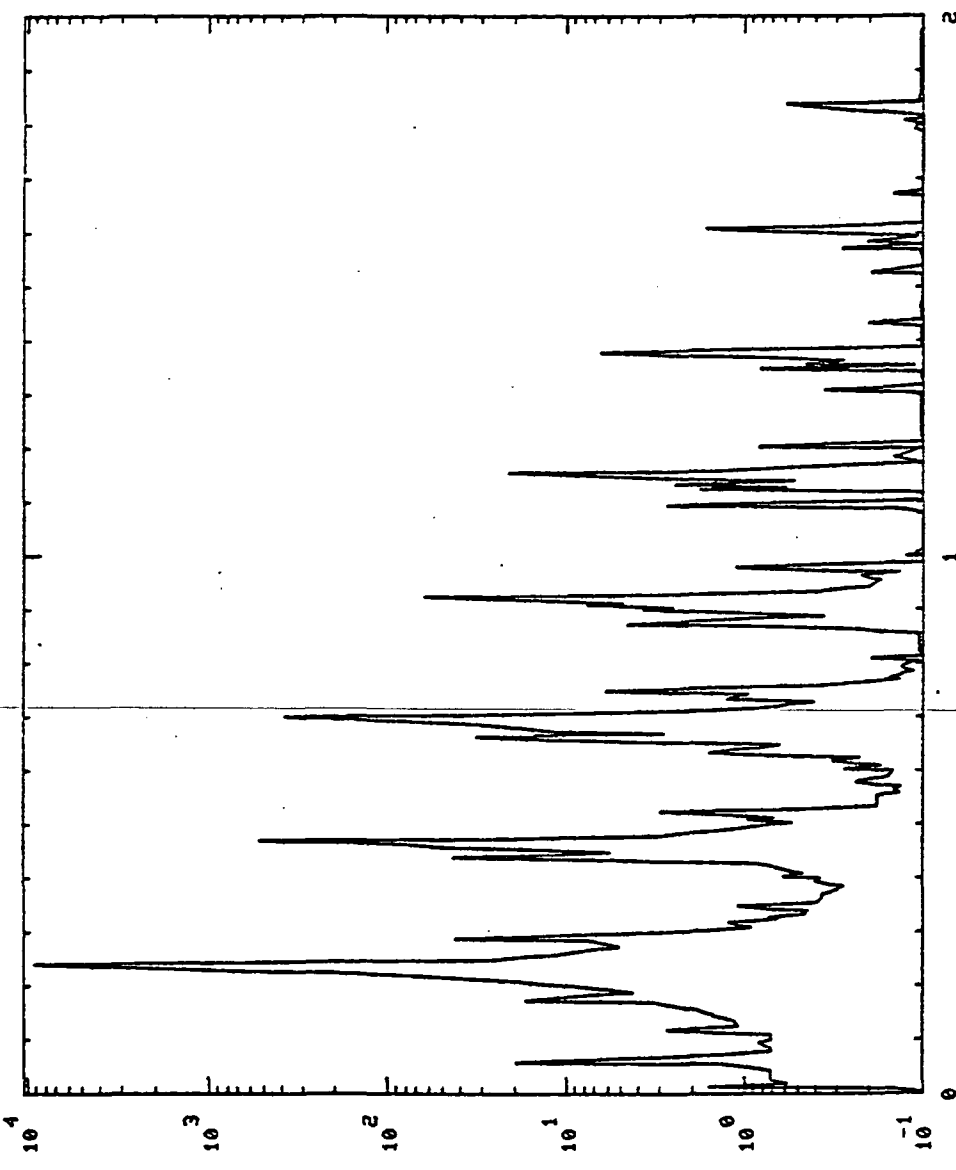
901316 P8P DS PR





S+ 4.01H0,'S

901316 OPB PC PR DC

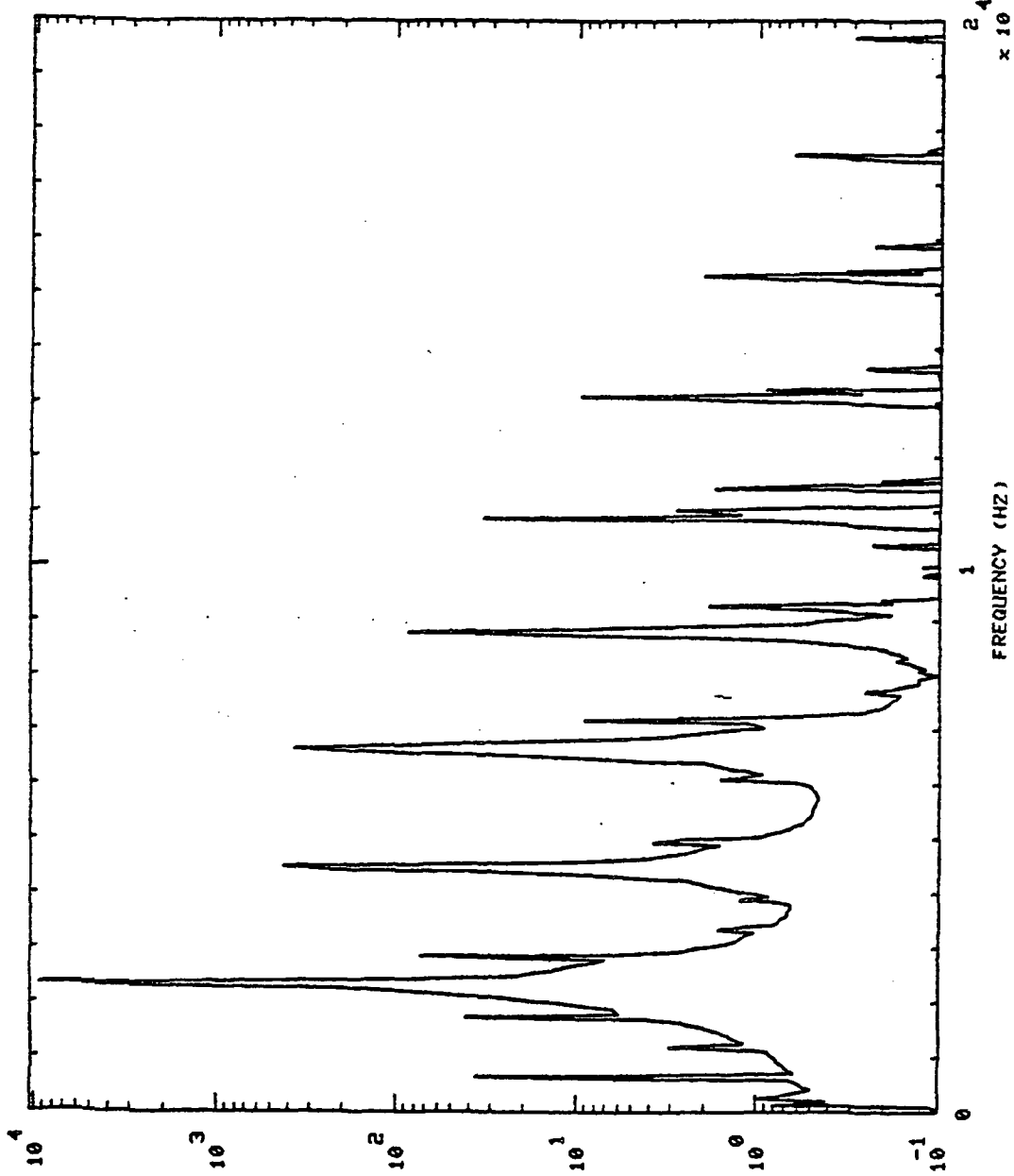


PSD / HZ

FREQUENCY (HZ) x 10<sup>4</sup>

S+ 11.01H0,'S

901316 OPB PC PR DC

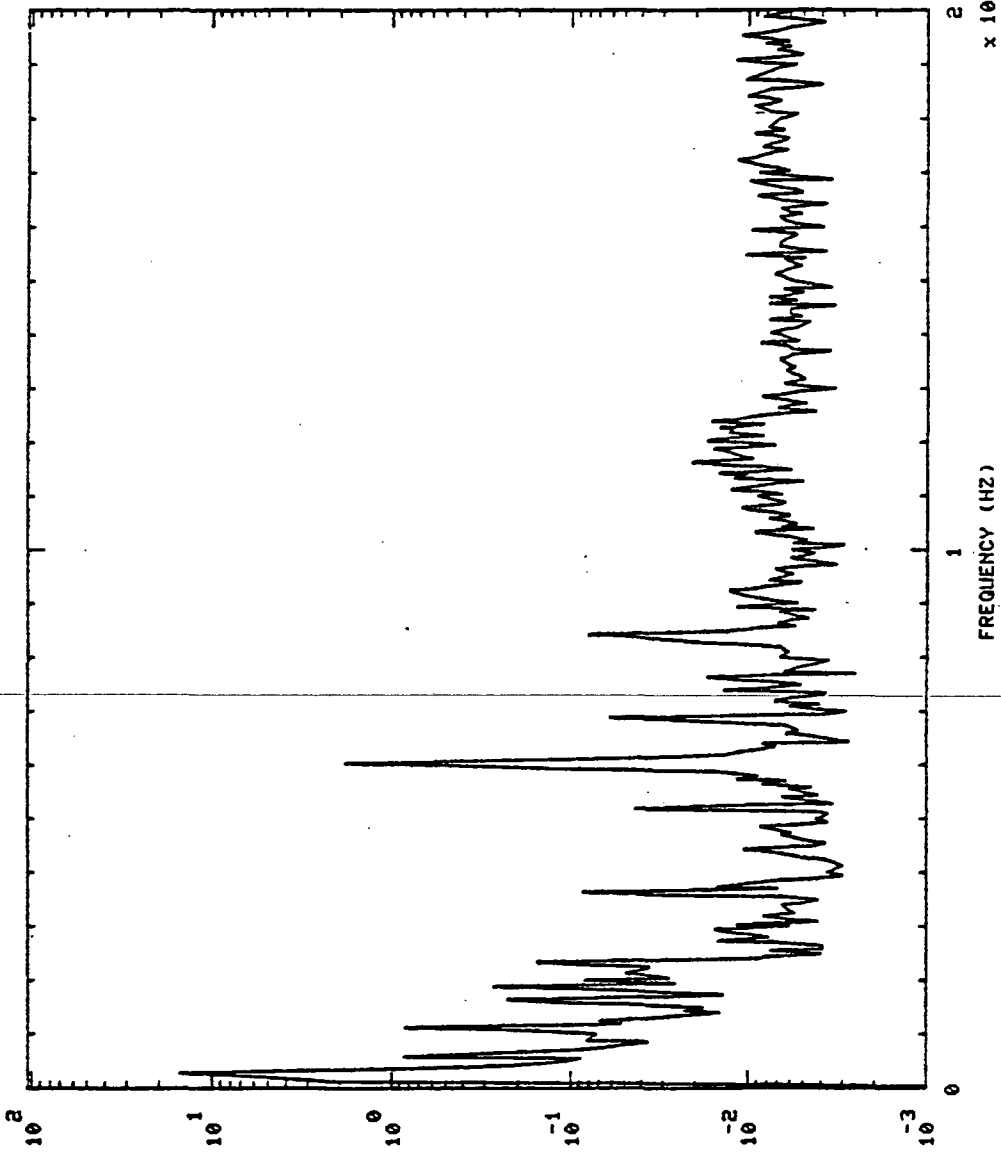


P SQ/MZ

FREQUENCY (HZ)

$2.4 \times 10^4$

901317 HPOP DS PR S+ 4.01H0,'S



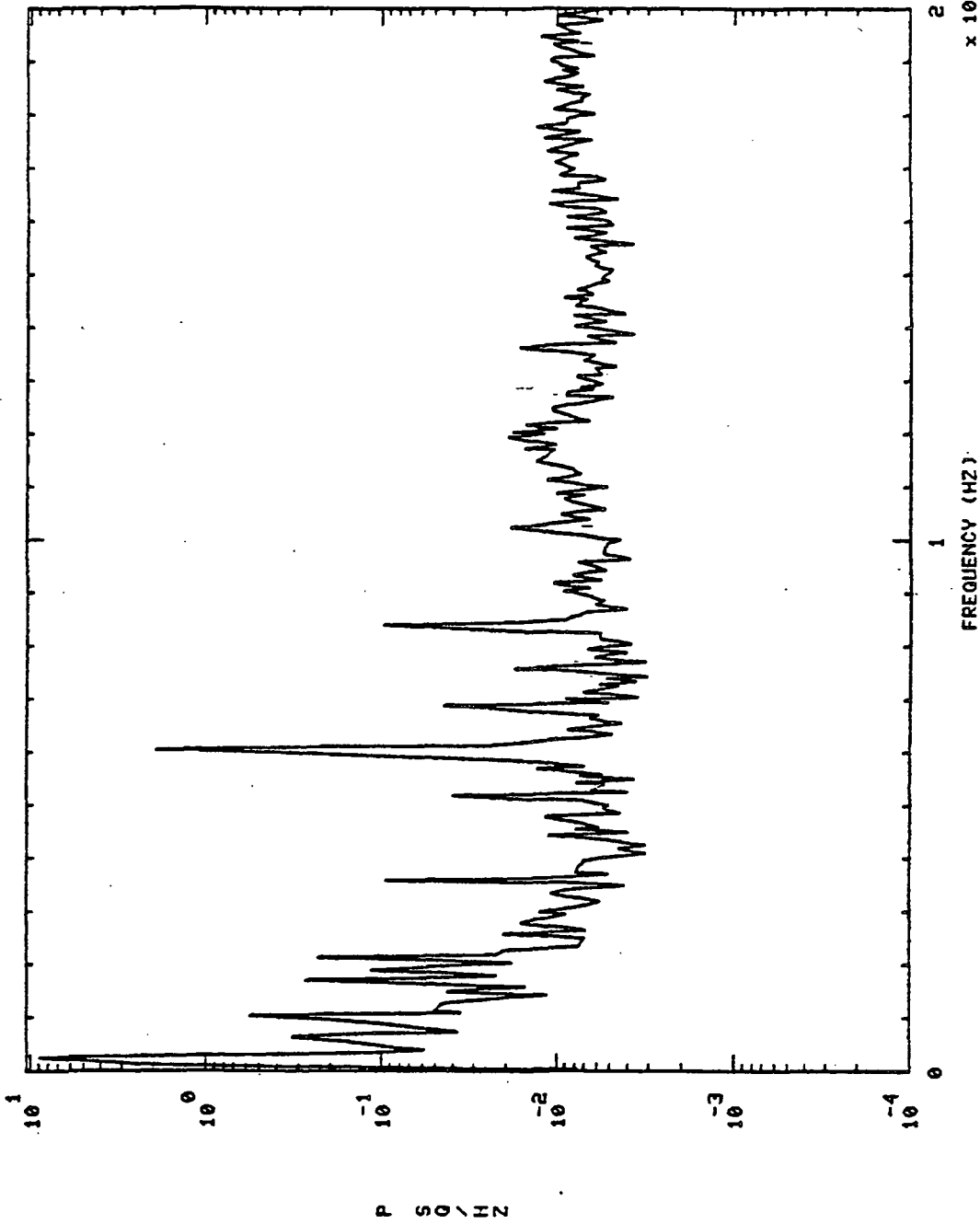
P S D \ HZ

FREQUENCY (HZ)

$\times 10^4$

S+ 11.01H0,'S

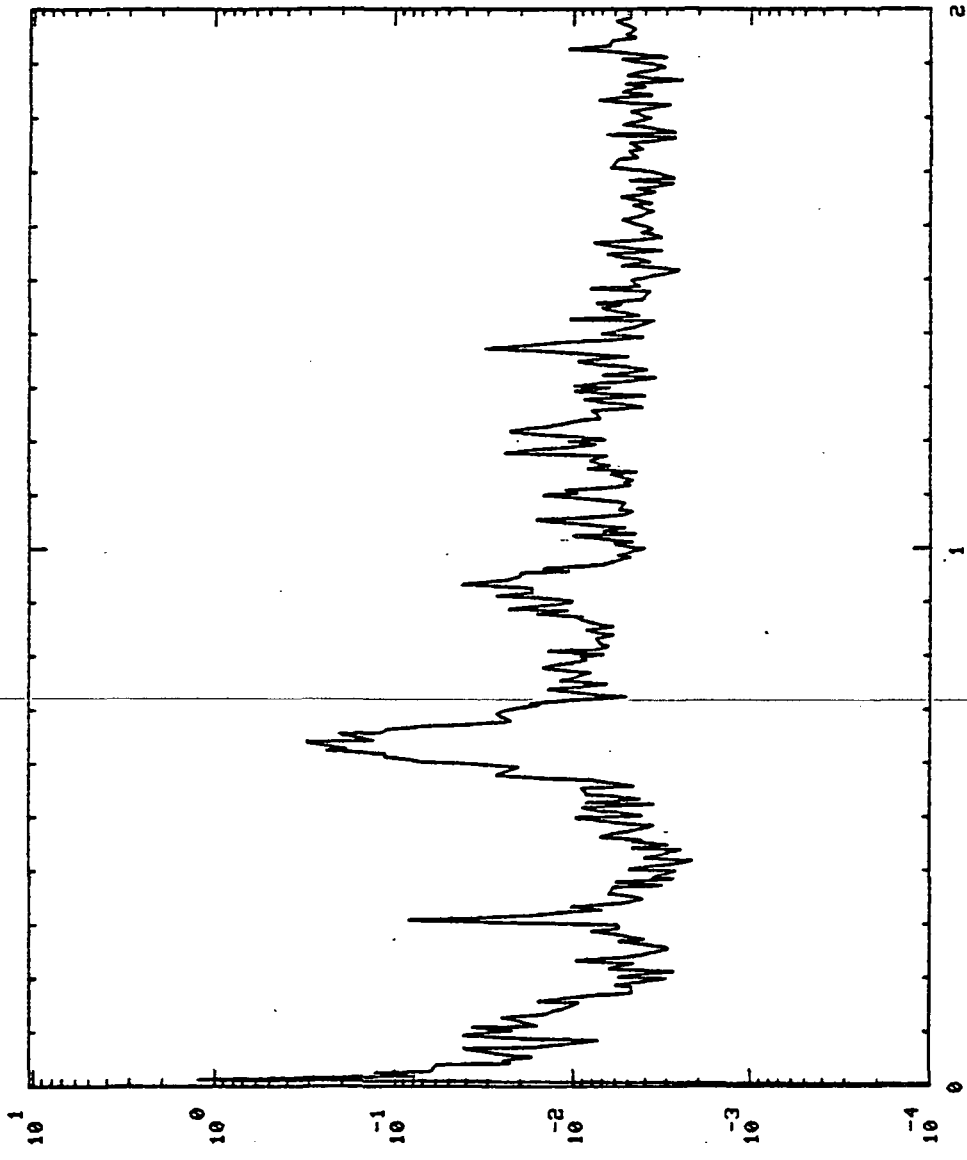
901317 HPOP DS PR



901317 MCC HOT GAS IN PR S+ 4.01110,'S

MCC HOT GAS IN PR

901317

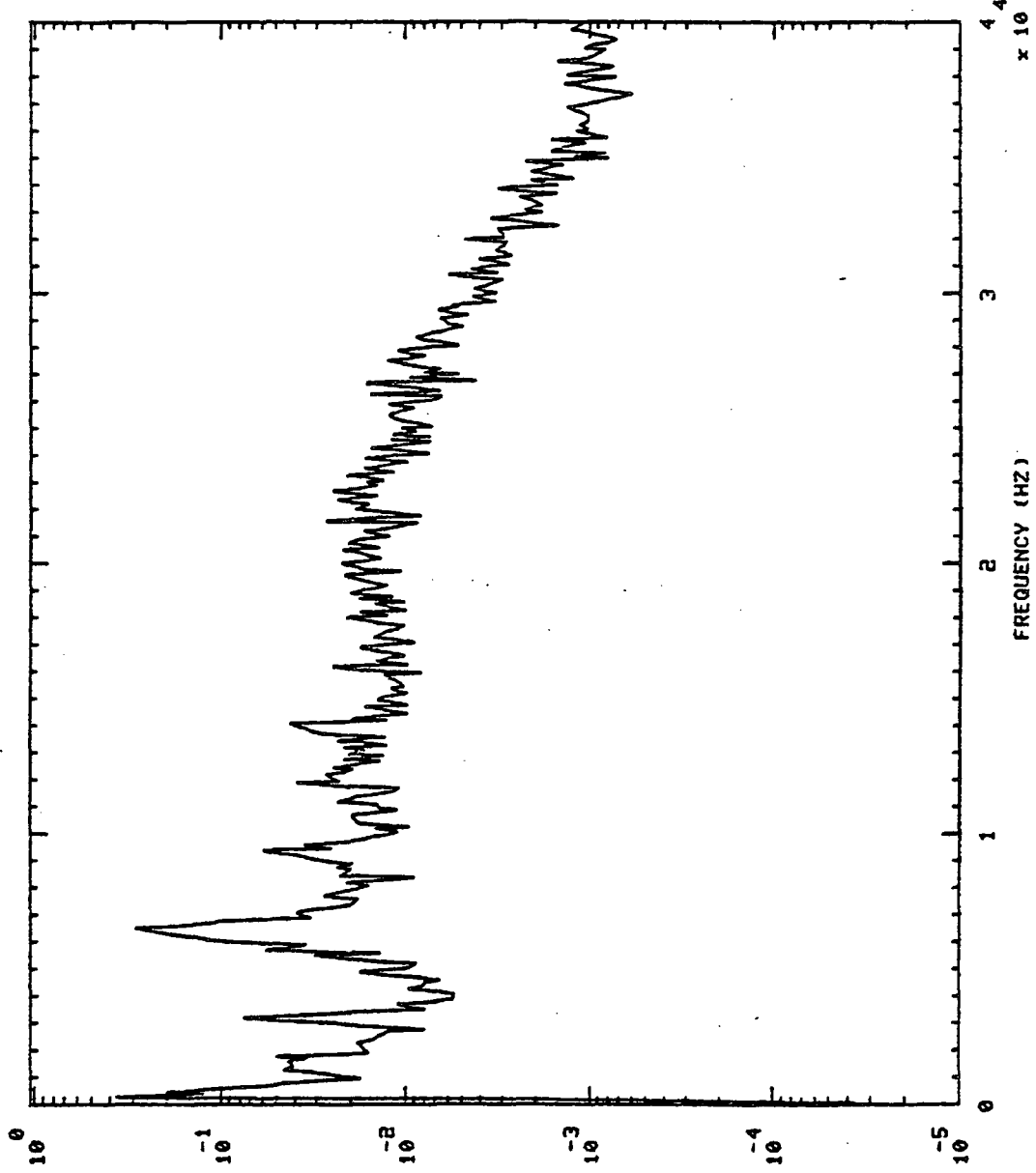


P S / HZ

2.4  
x 10<sup>4</sup>

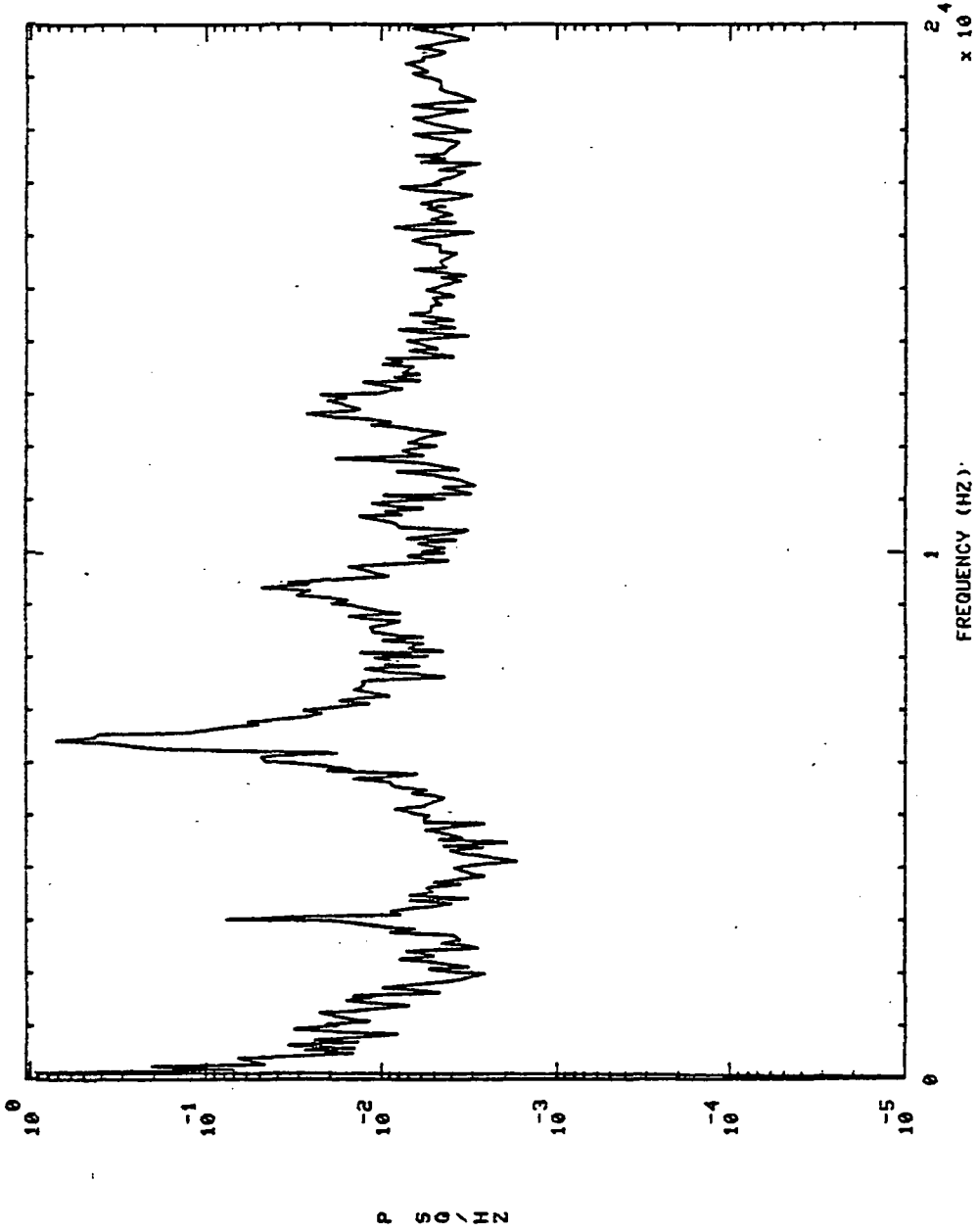
1  
FREQUENCY (HZ)

901317 MCC HOT GAS IN PR S+ 4.01H0,'S

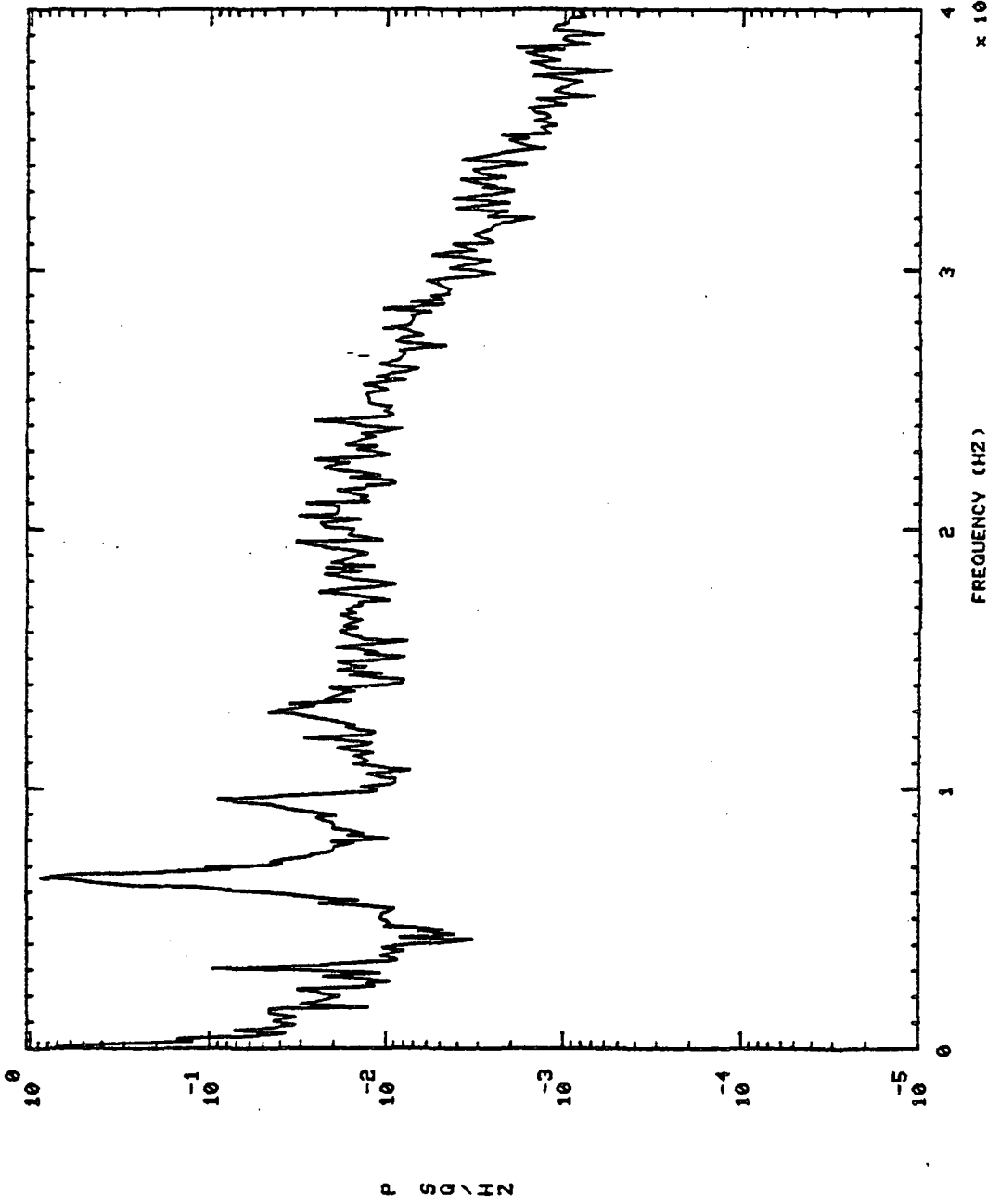


P S D / H Z

901317 MCC HOT GAS IN PR S+ 11.01H0,'S

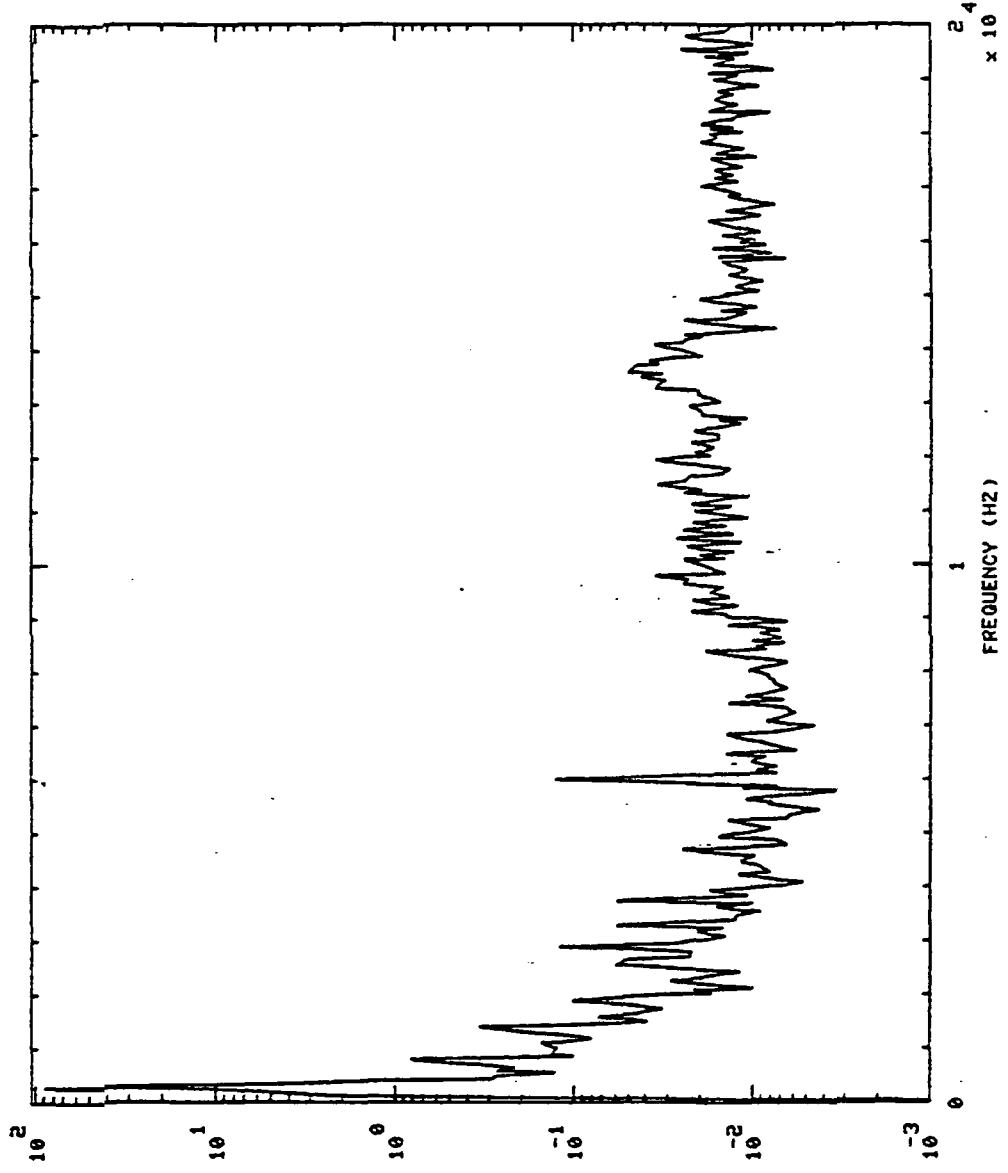


901317 MCC HOT GAS IN PR S+ 11.01H0,'S





901317 PBP DS PR S+ 4.01H0,'S



P S D \ / H Z

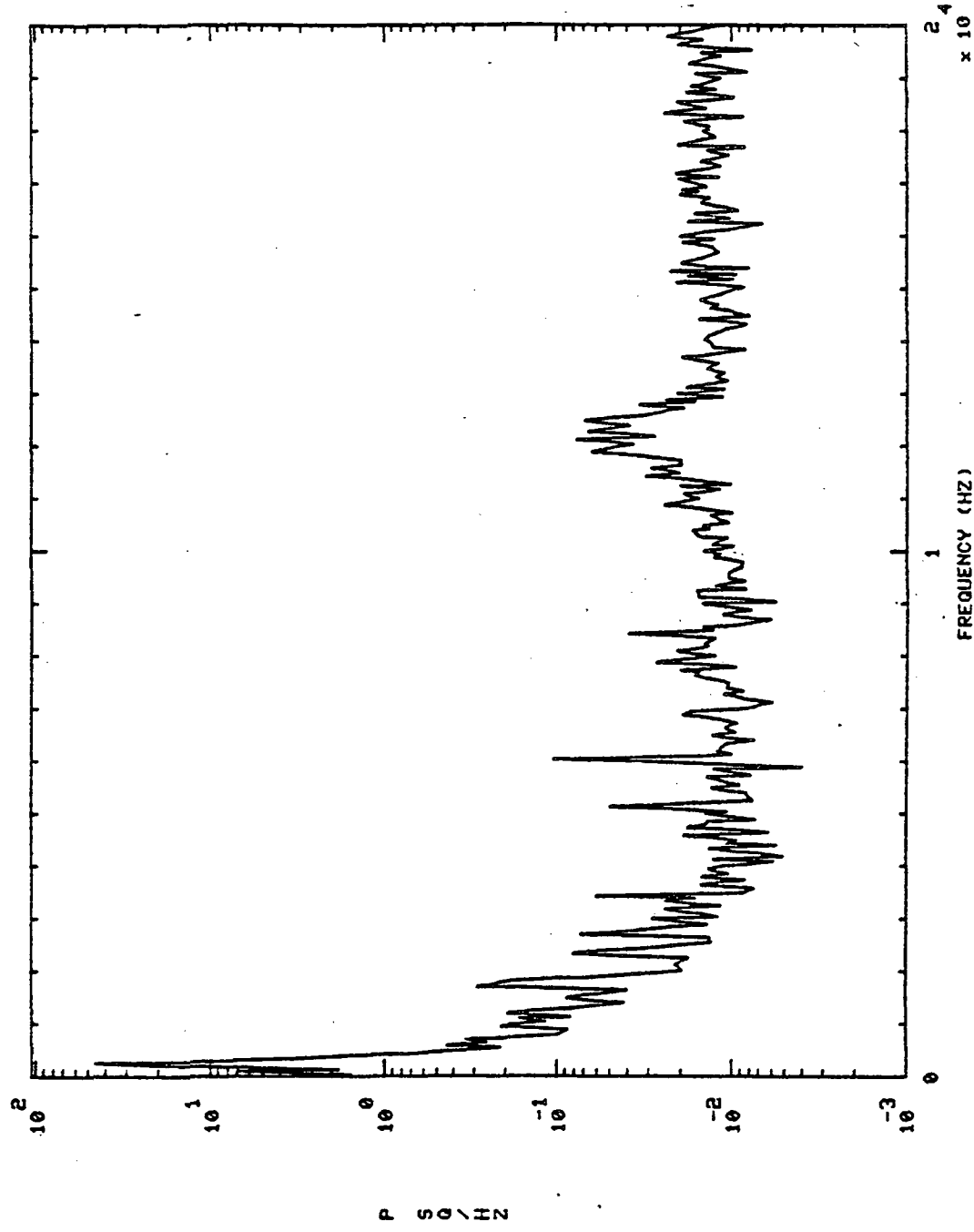
FREQUENCY (HZ)

$\times 10^4$

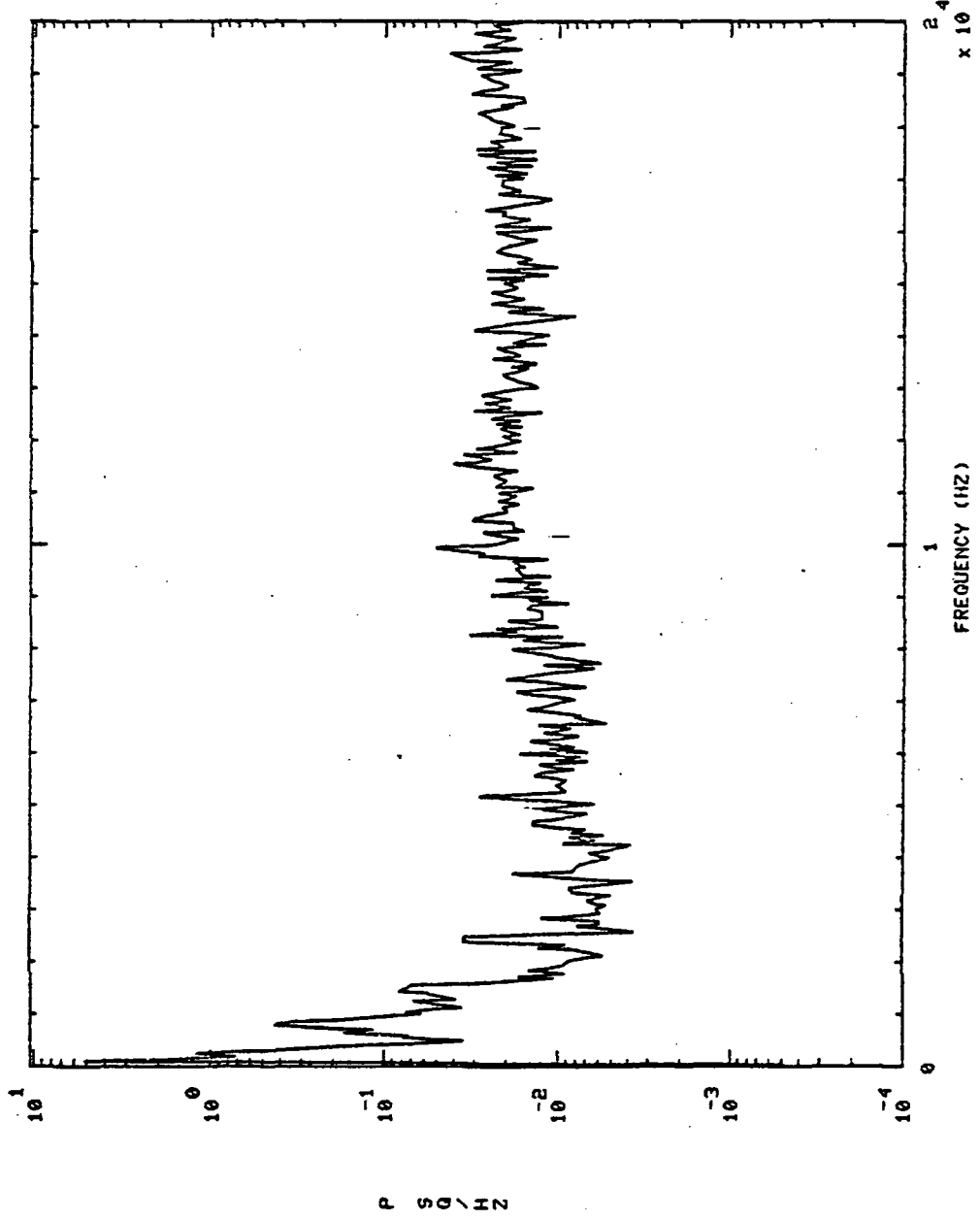
S+ 11.01H0,'S

F8P D5 PR

901317



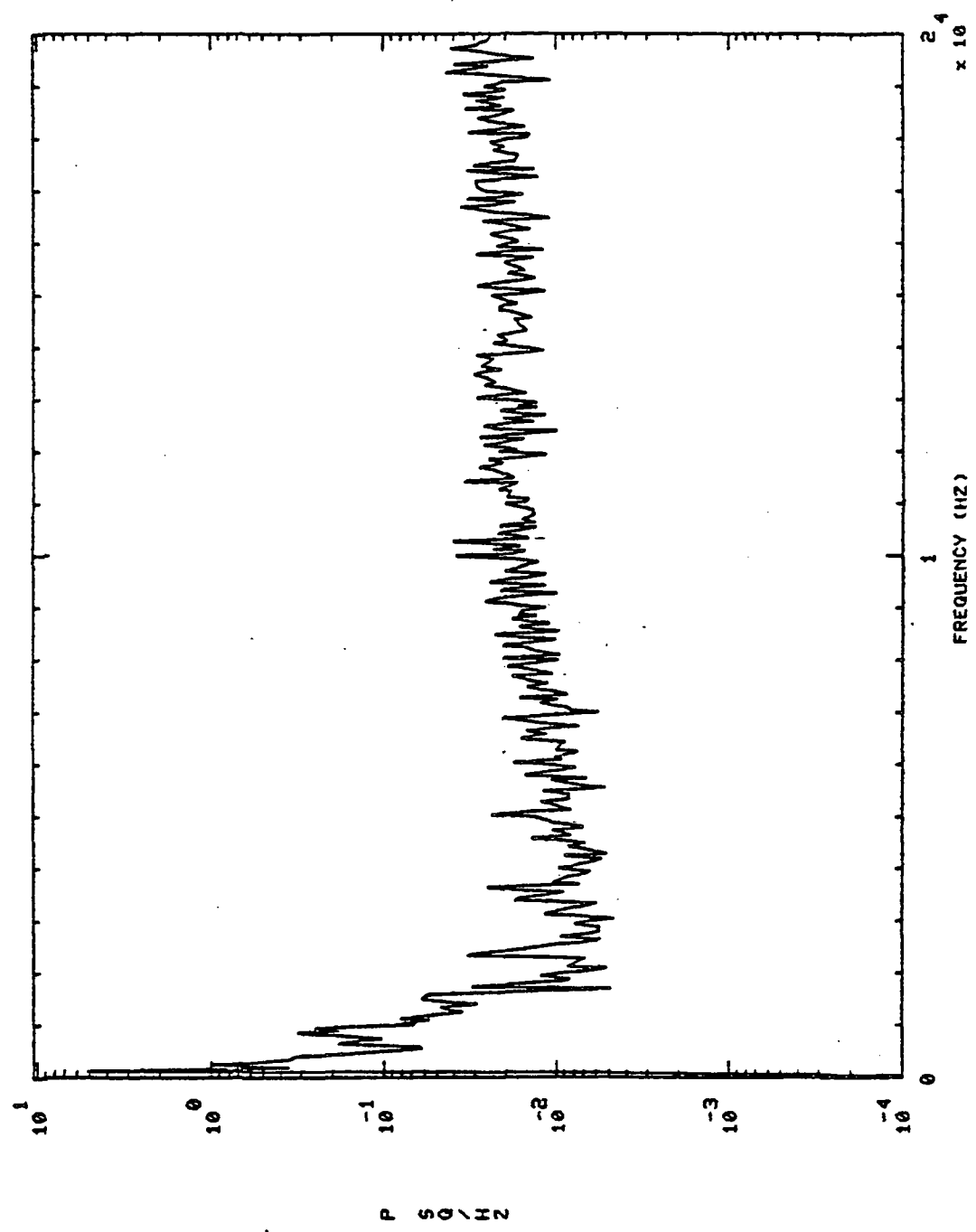
901317 OPB PC PR DC S+ 4.01H0,'S



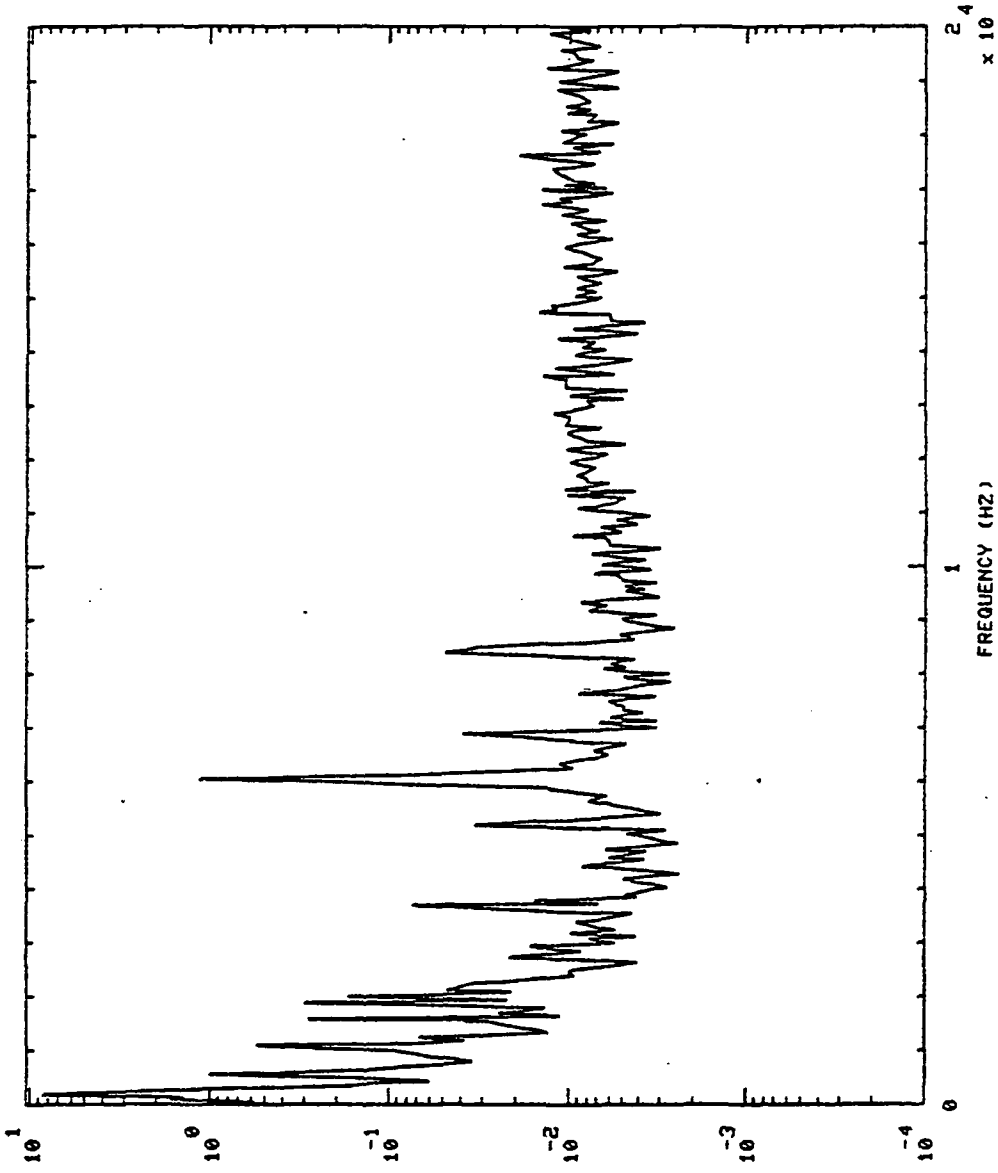
S+ 11.01H0.'S

OPB PC PR DC

901317



901319 HPOP DS PR S+ 6.01H0,'S

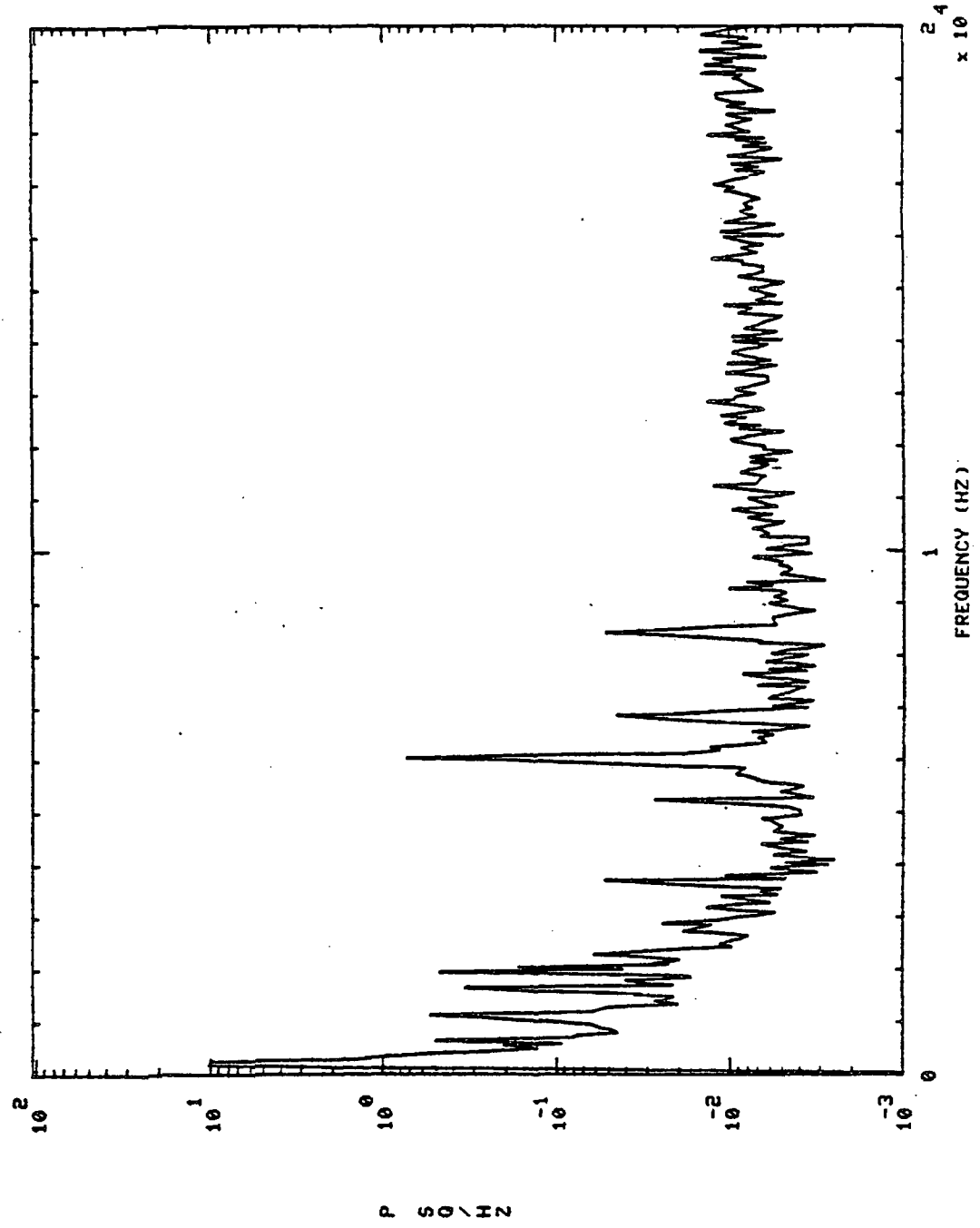


P SQ/MZ

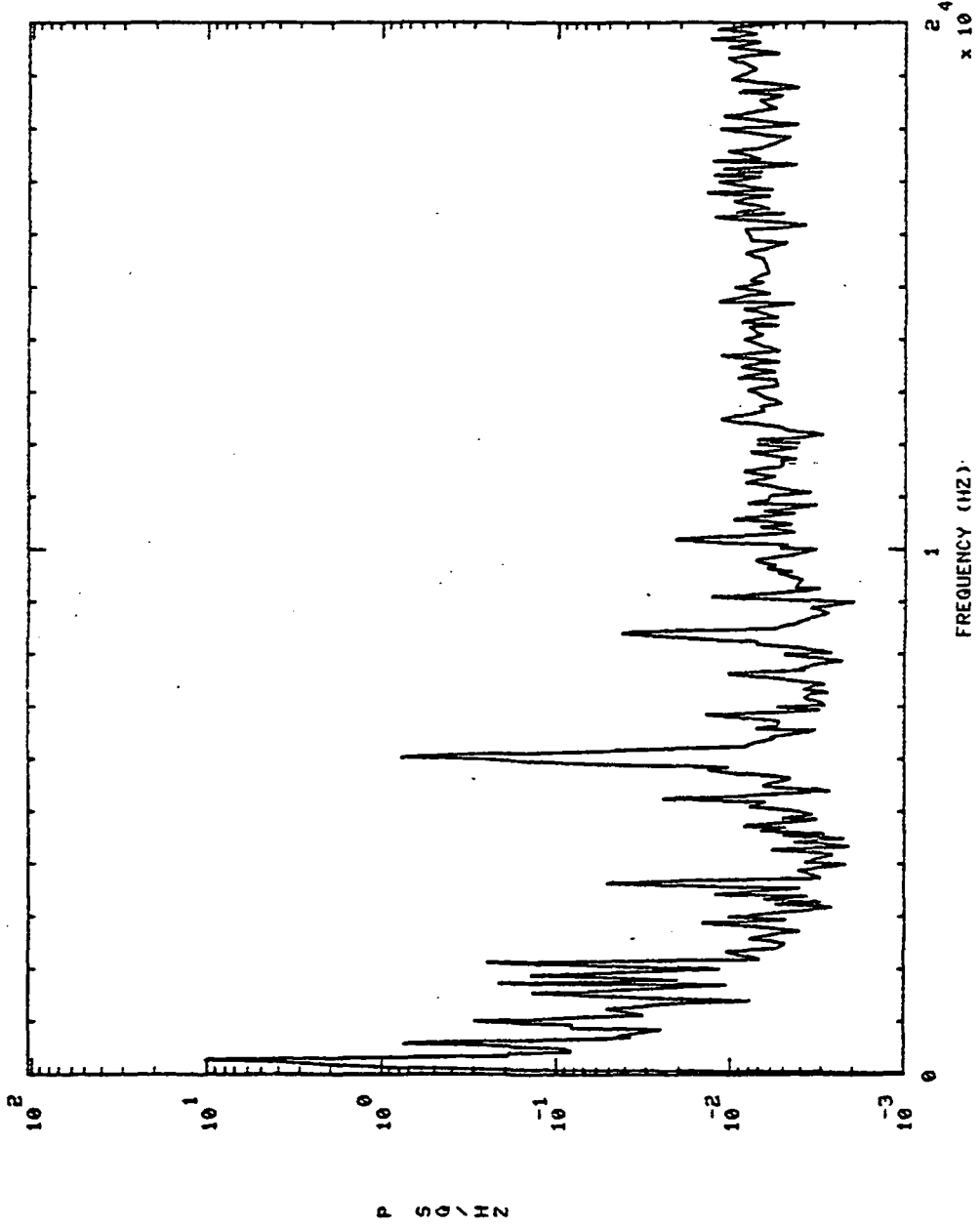
FREQUENCY (HZ)

x 10<sup>4</sup>

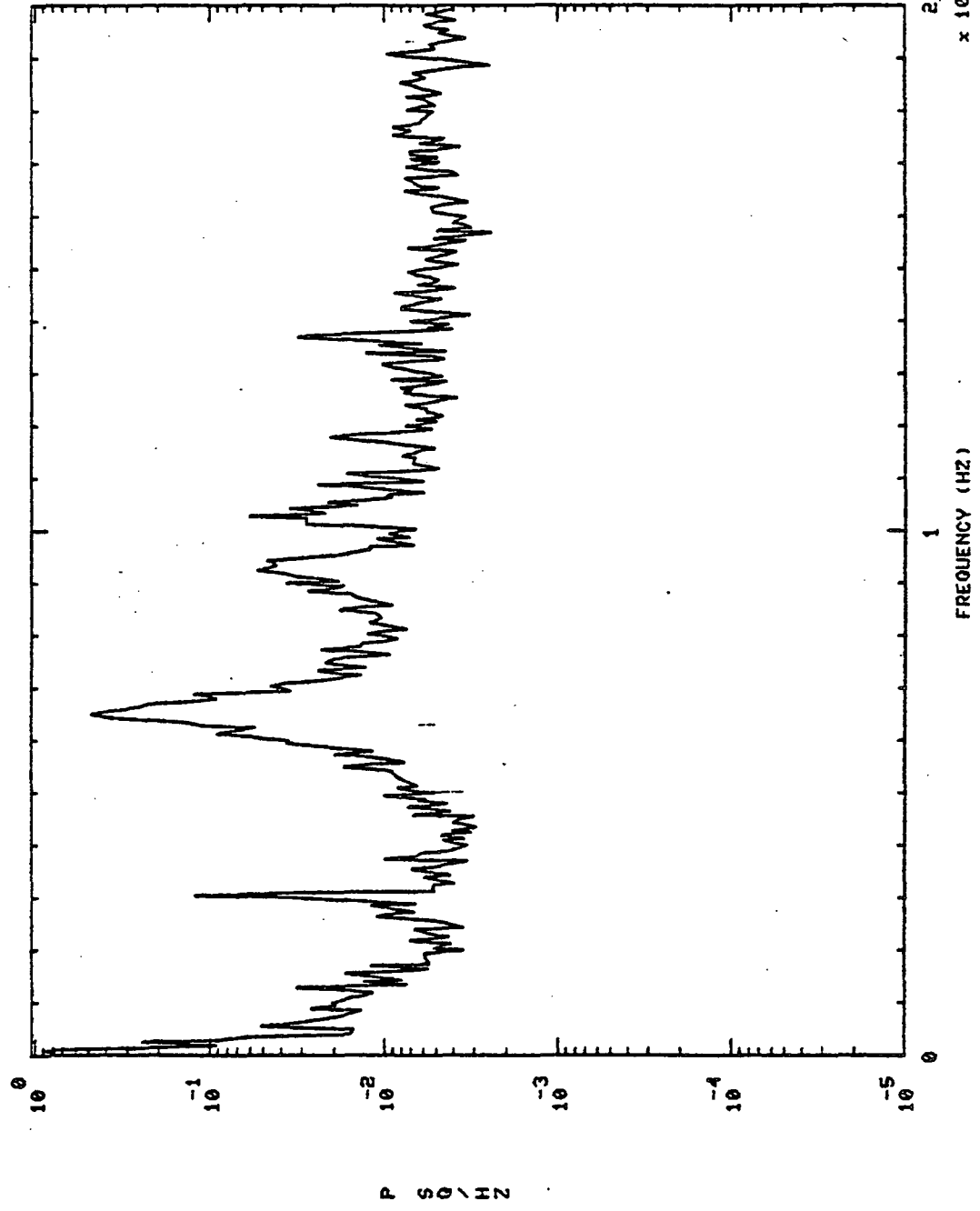
901319 HPOP DS PR S+ 30.01140,'S



901319 HFOP DS PR S+ 92.01H0.'5

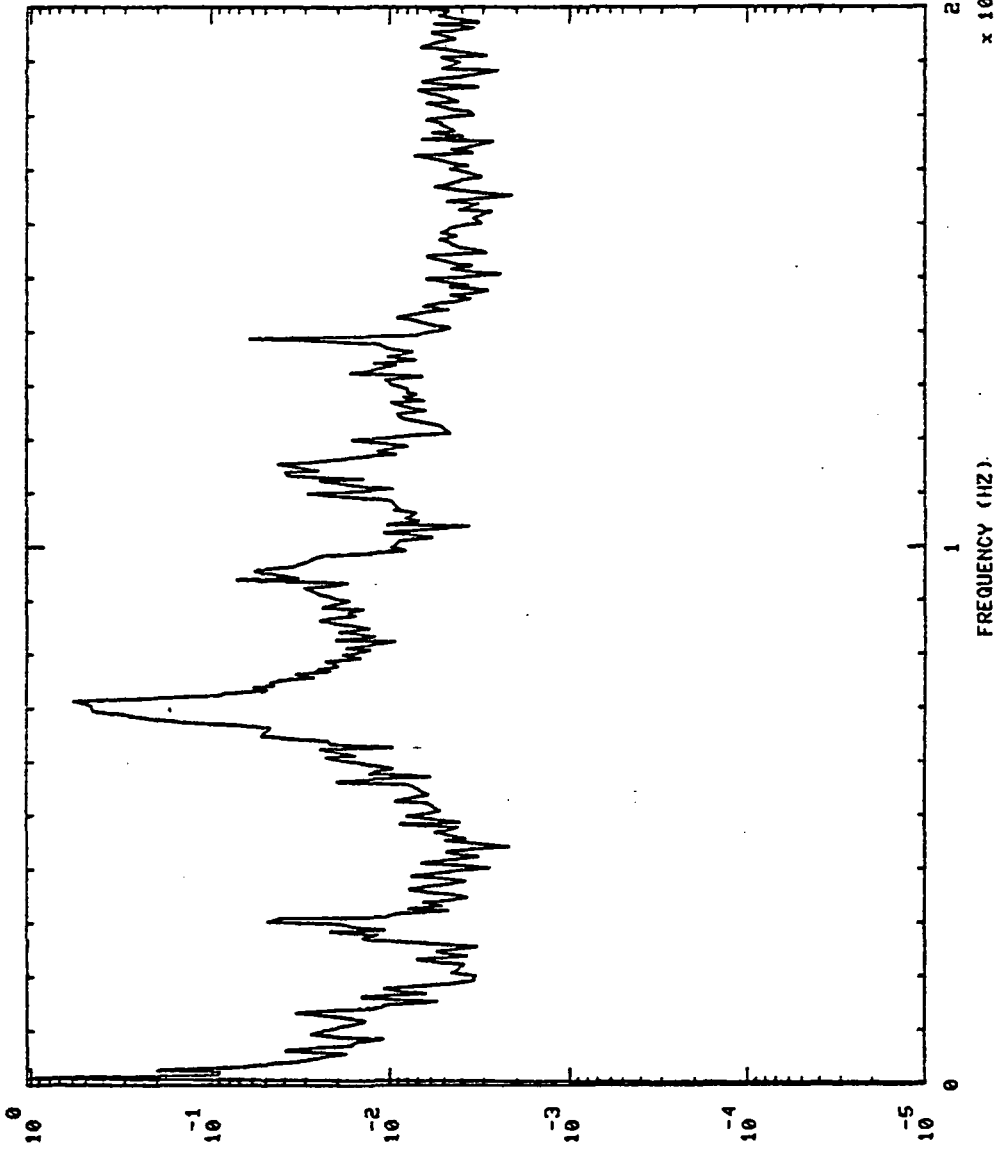


901319 MCC HOT GAS IN PR S+ 6.01H0,'S





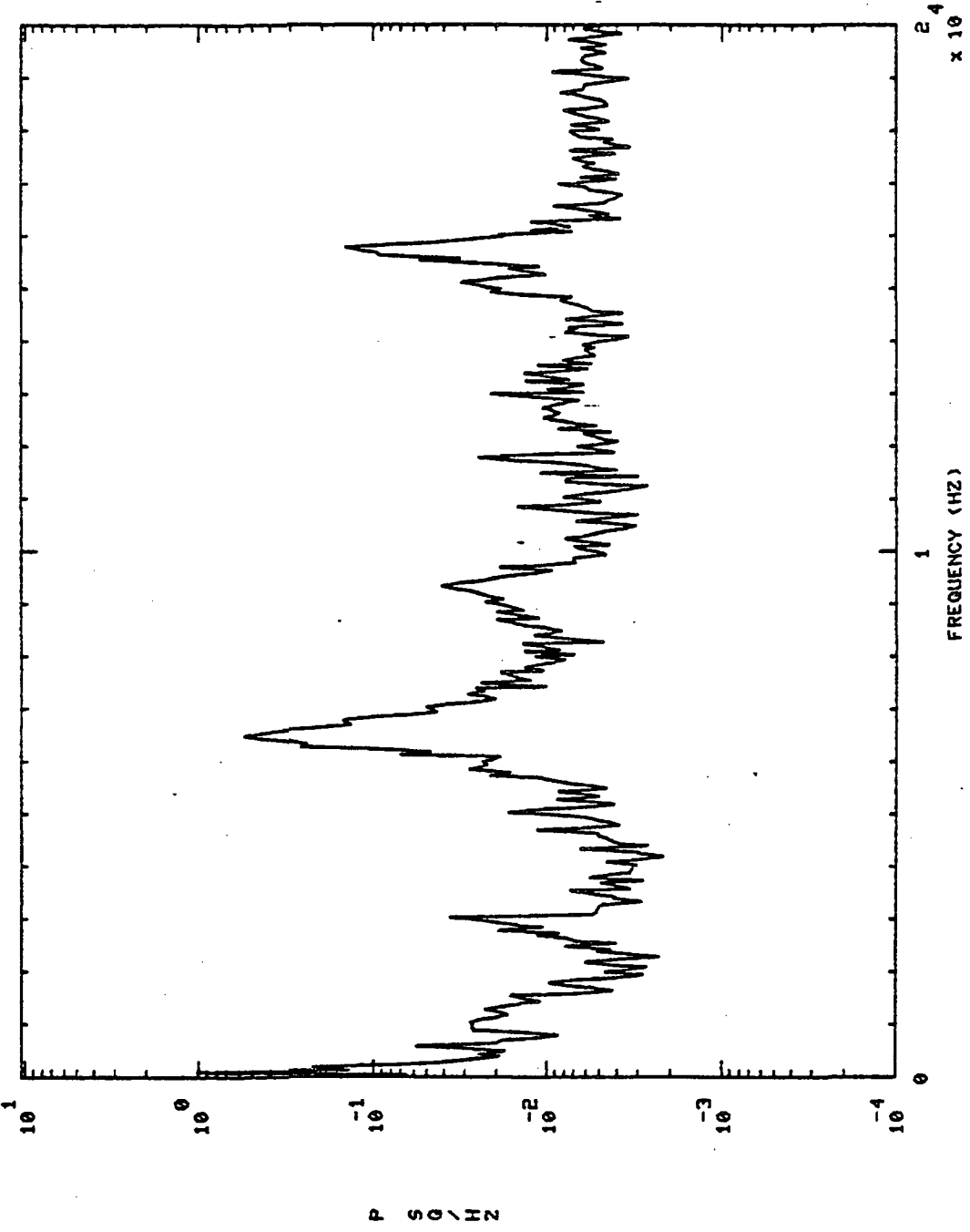
901319 MCC HOT GAS IN PR S+ 30.01H0,'S



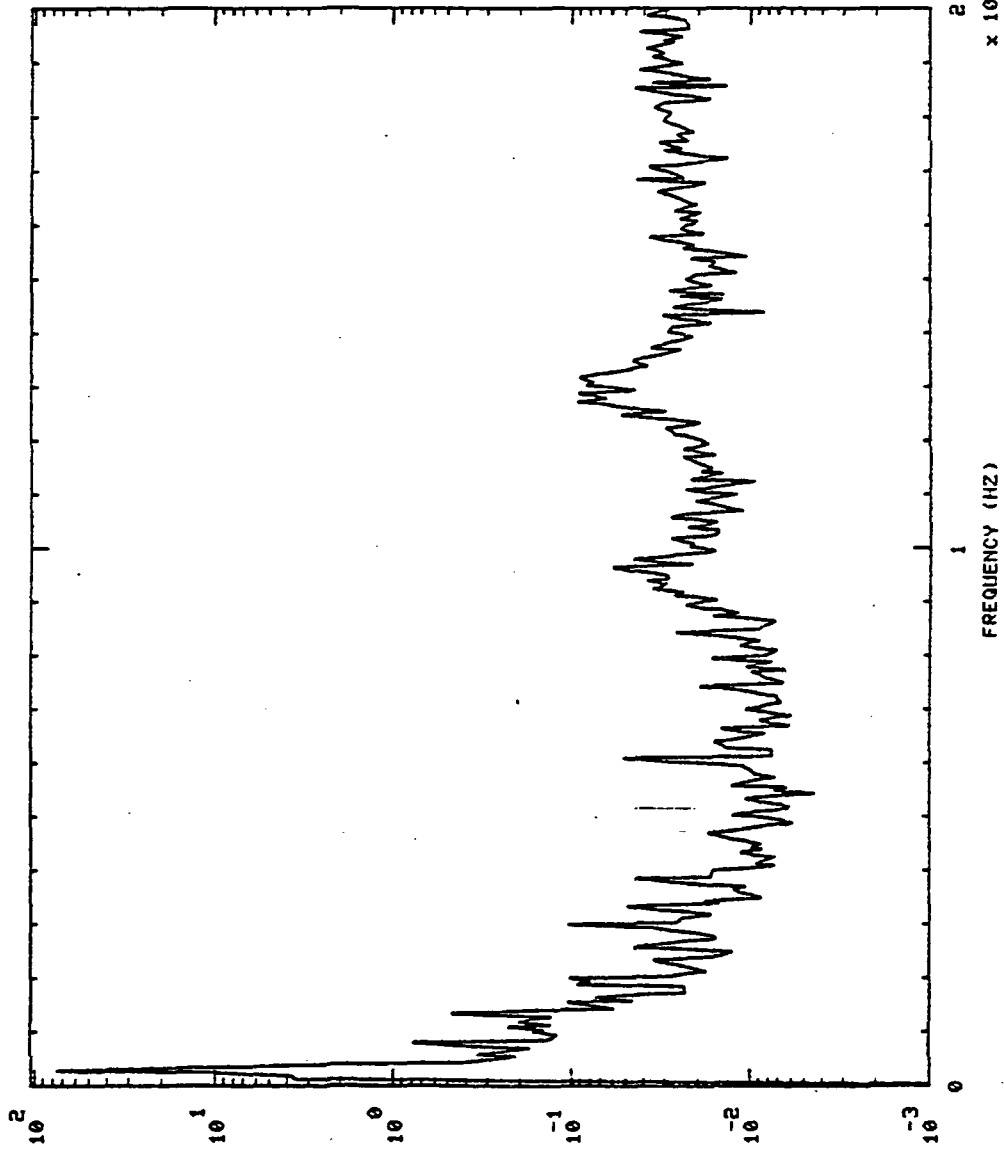
P S D / H Z

FREQUENCY (HZ) x 10^4

901319 MCC HOT GAS IN PR S+ 92.01H0,'S



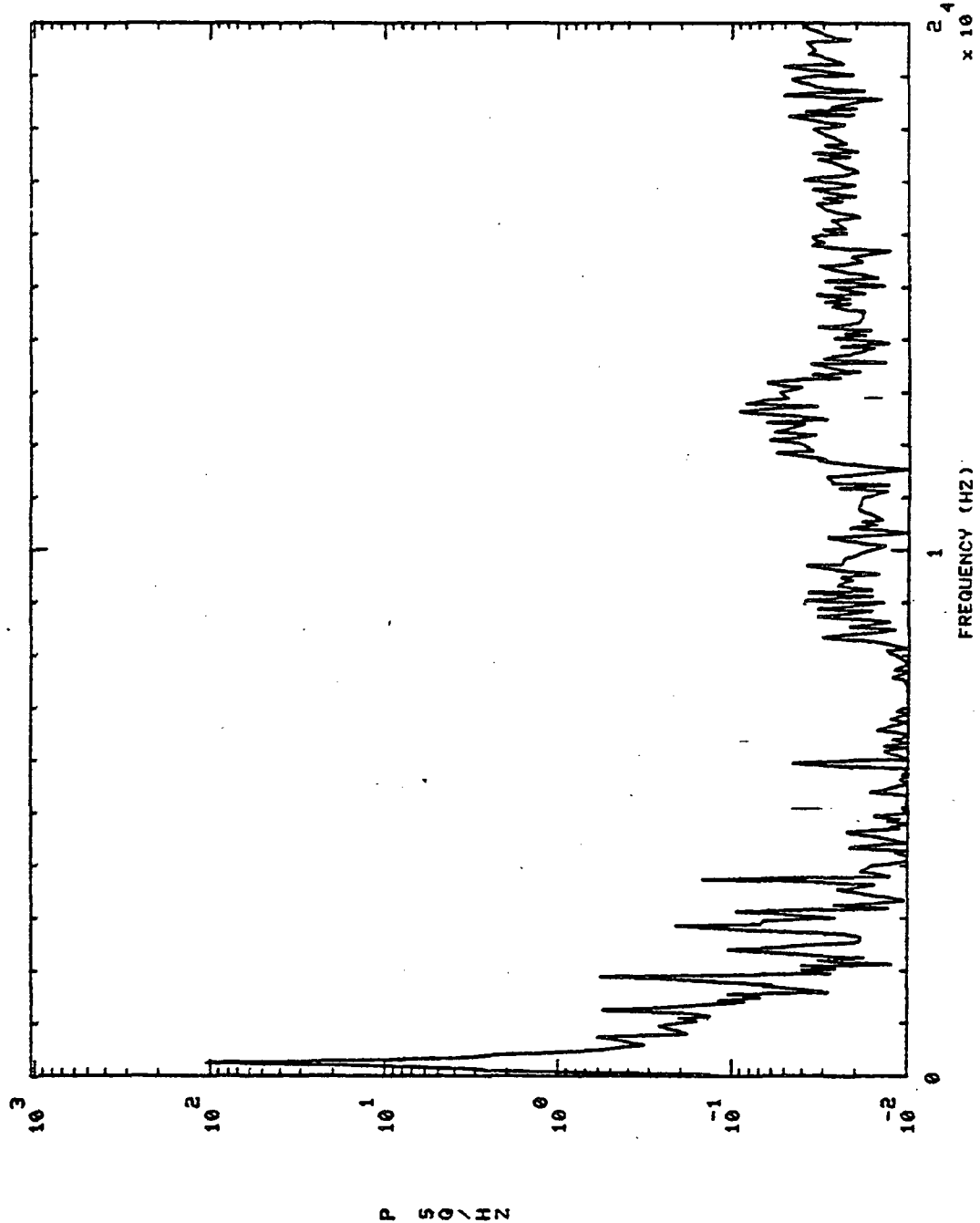
901319 PBP DS PR S+ 6.0140, '5



P S O \ IN

S+ 30.01H0,'S

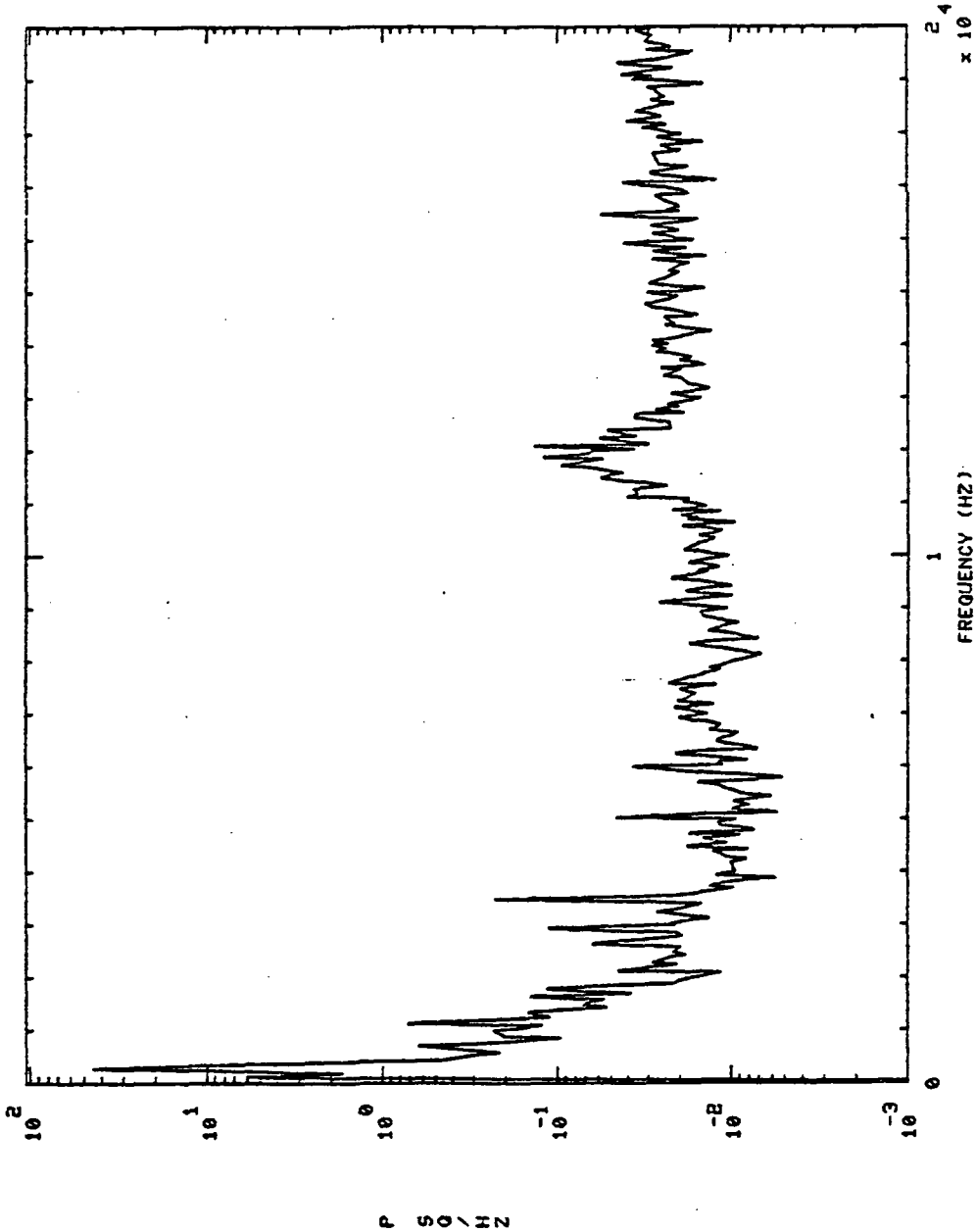
901319 PBP D5 PR



4-D

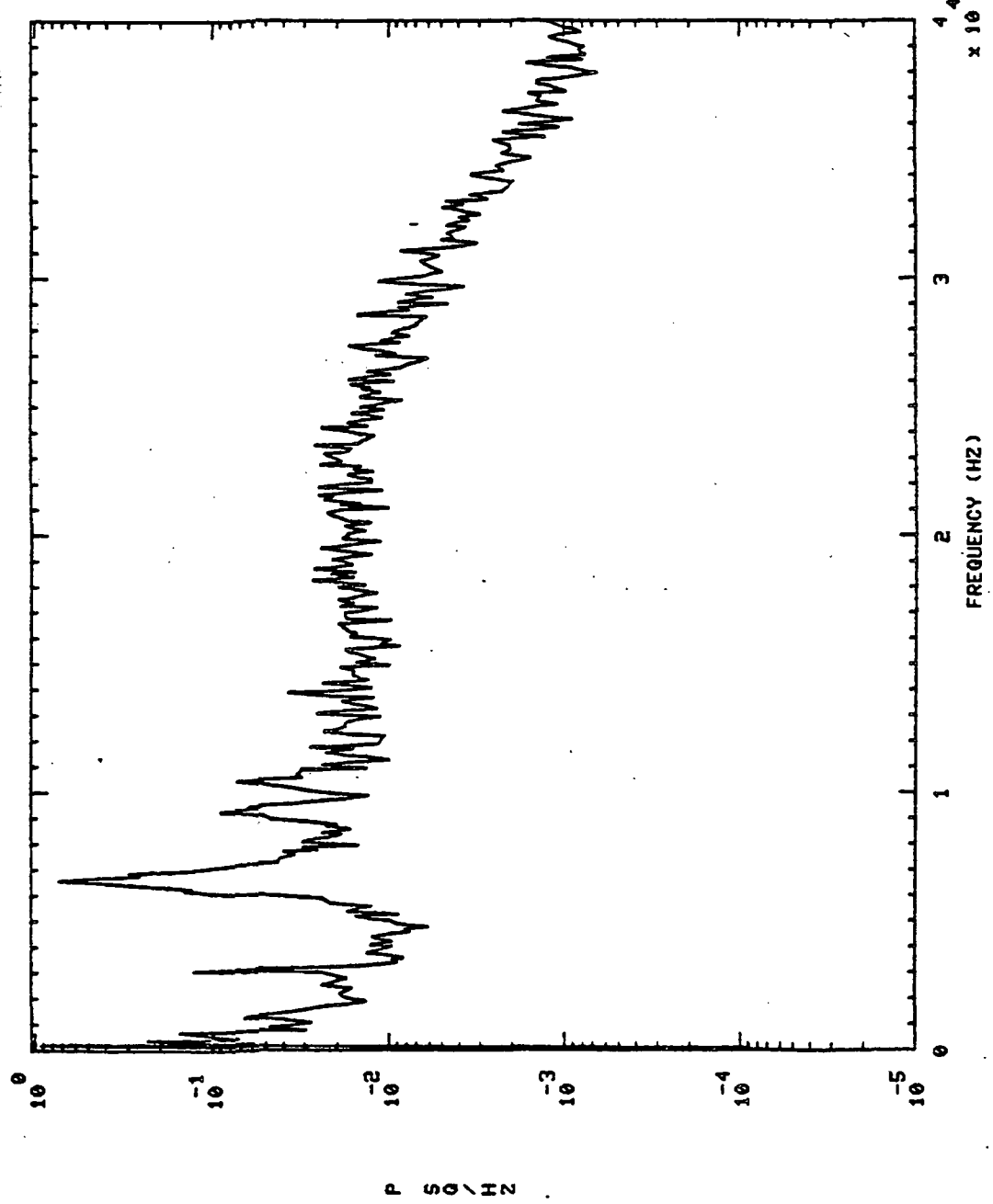
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901319 PBP DS PR S+ 92.01H0 'S



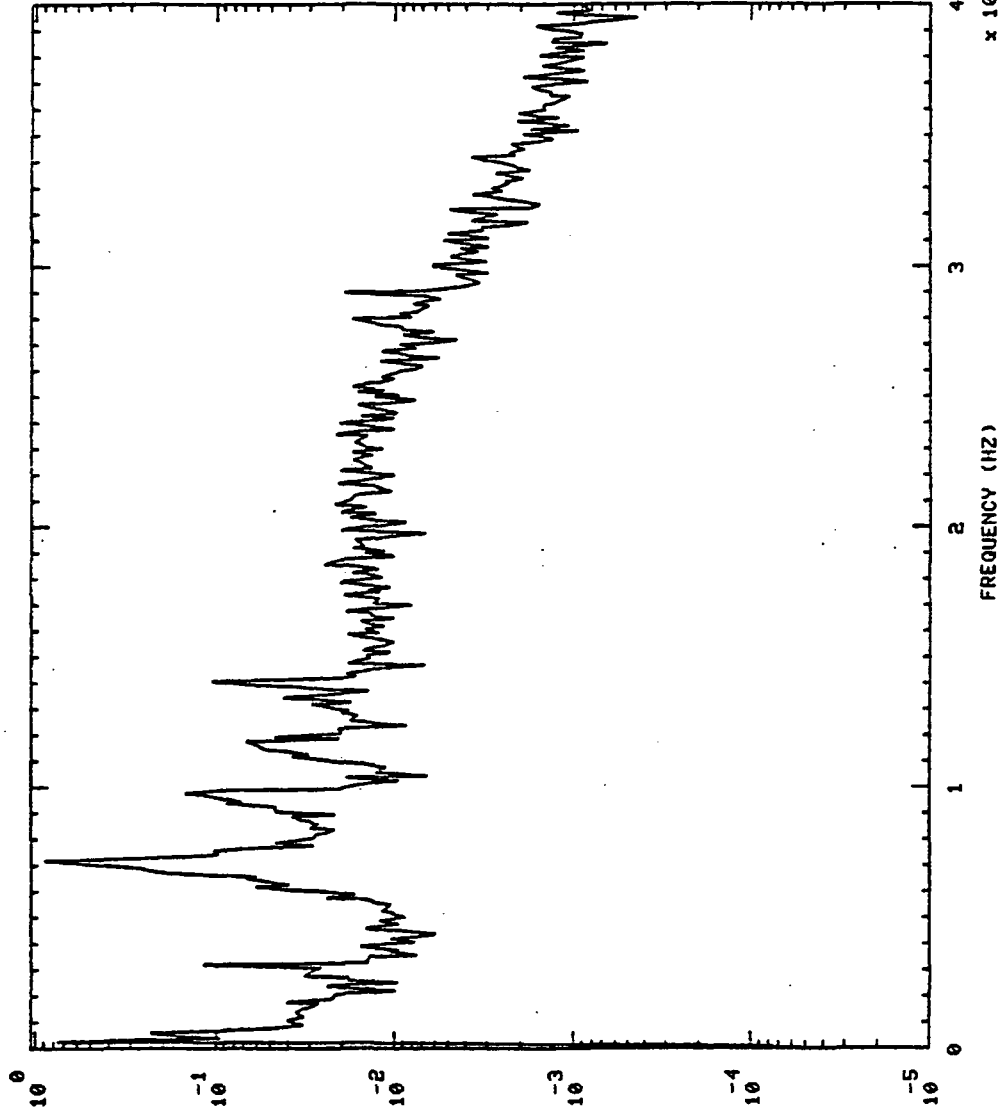
S+ 12.01H0.75

901319 MCC IN PR



S+ 60.01H0,'S

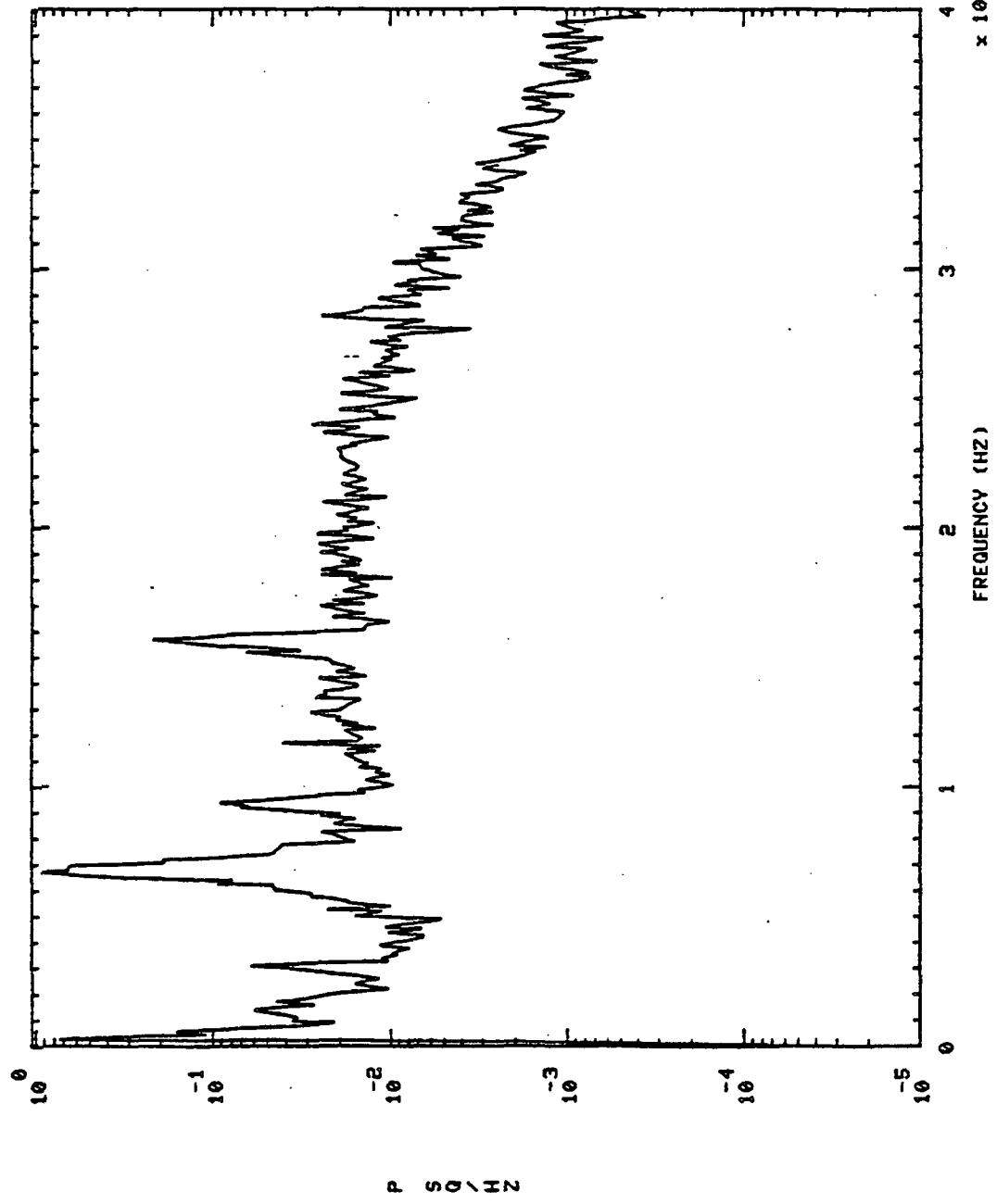
901319 MCC IN PR



P SQ/HZ

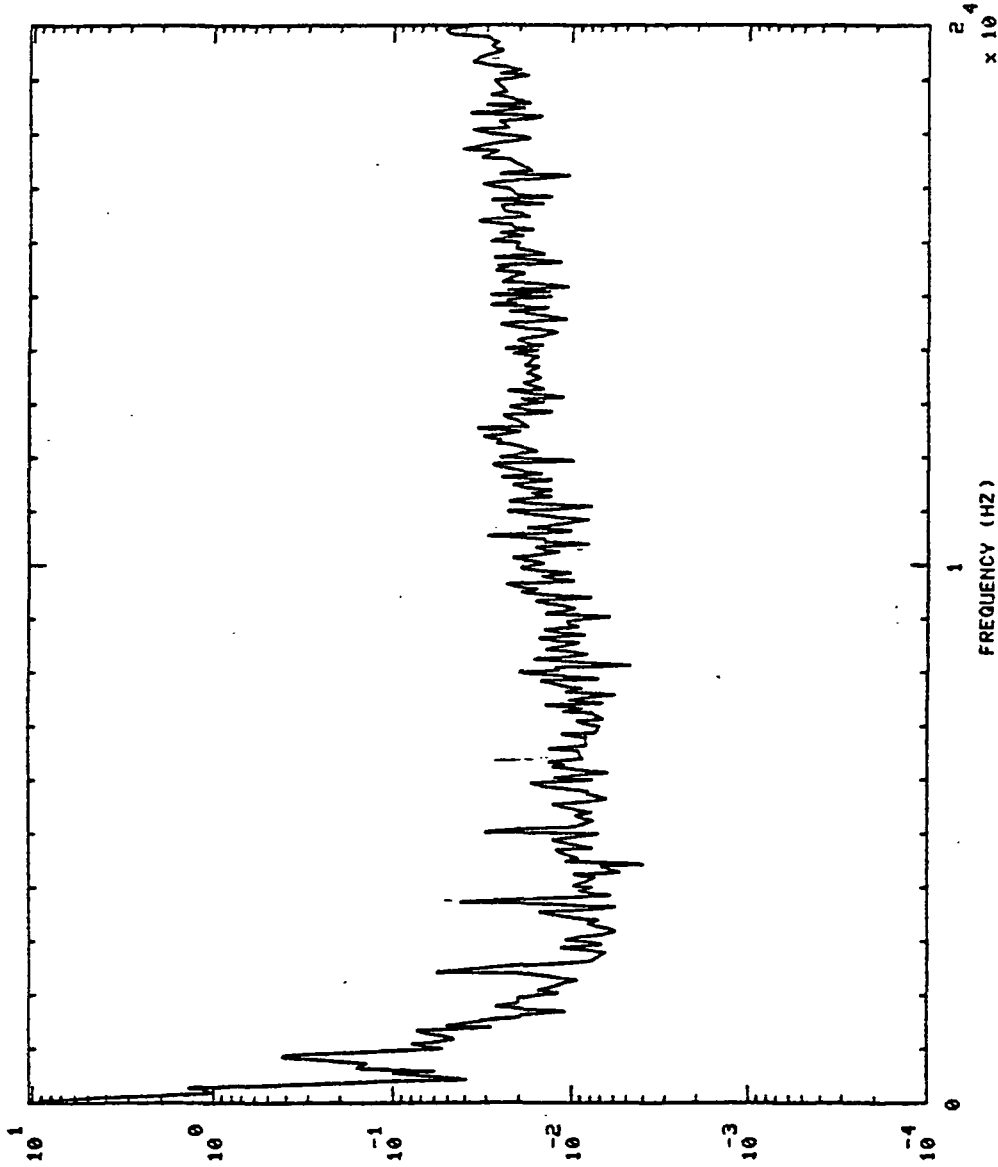
S+ 180.01H0.'S

901319 MCC IN PR





901319 OPB PC PR DC S+ 6.0100'S



P S D / H Z

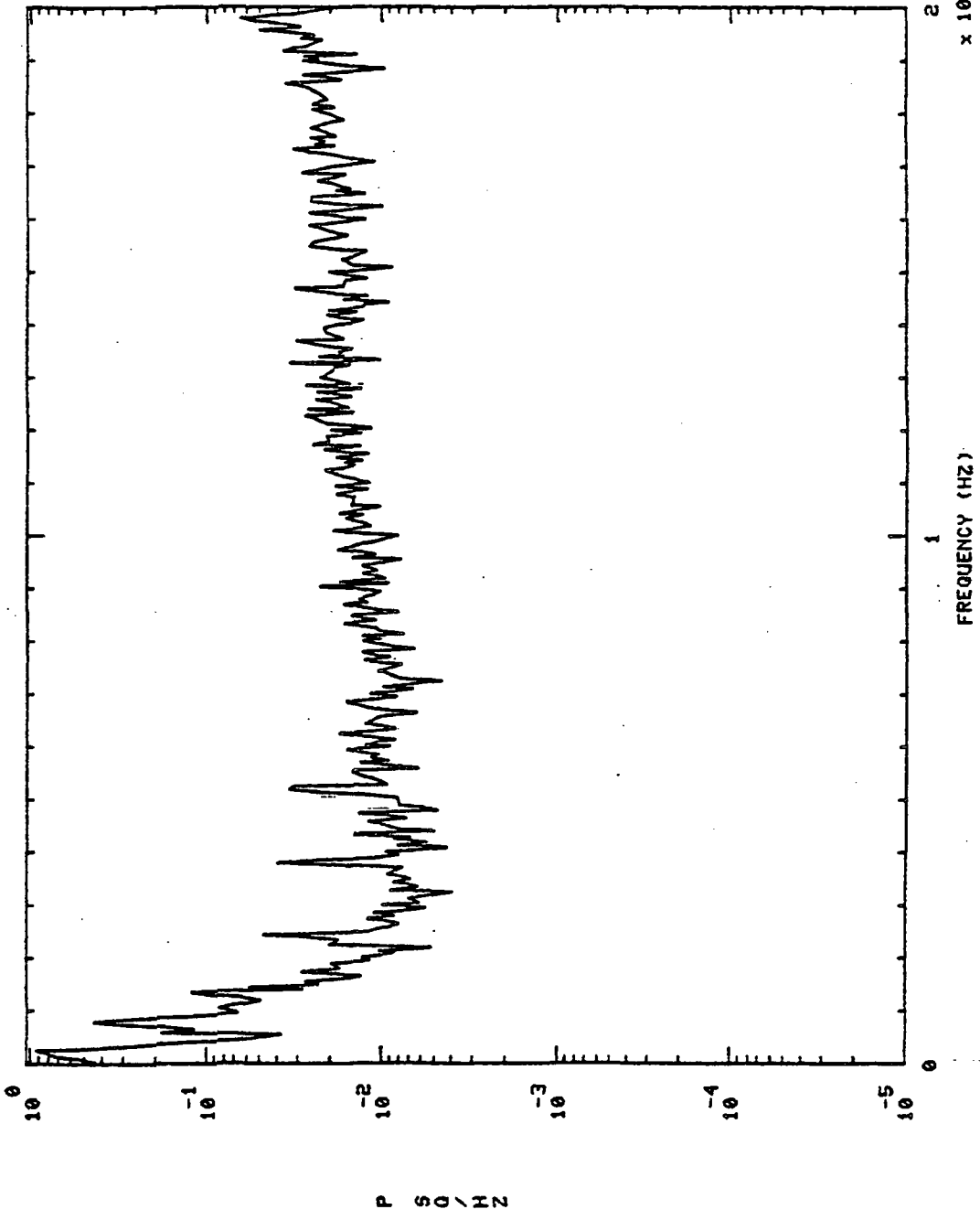
FREQUENCY (H Z)

$\times 10^4$

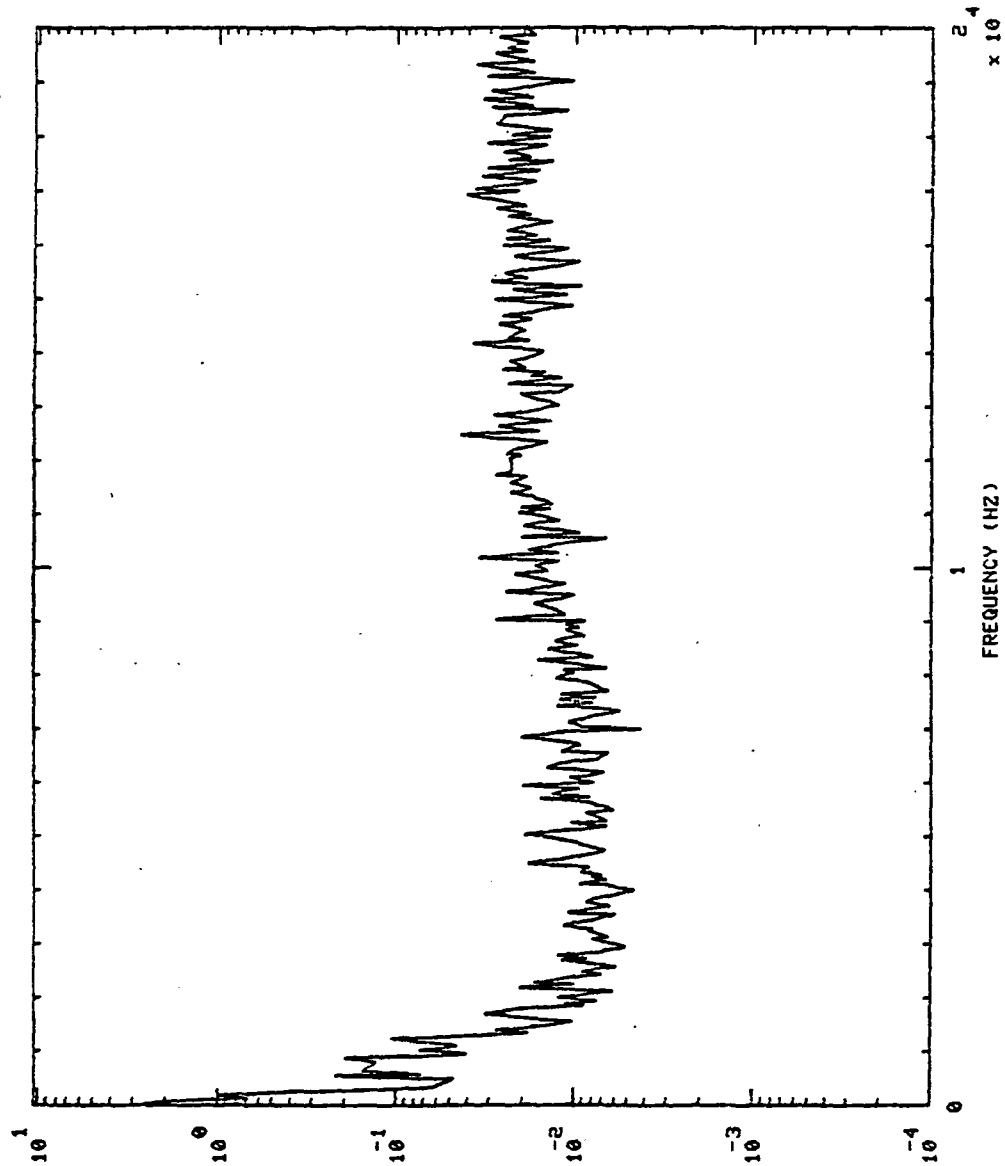
6+ 30.010, '6

OPB PC PR DC

901319

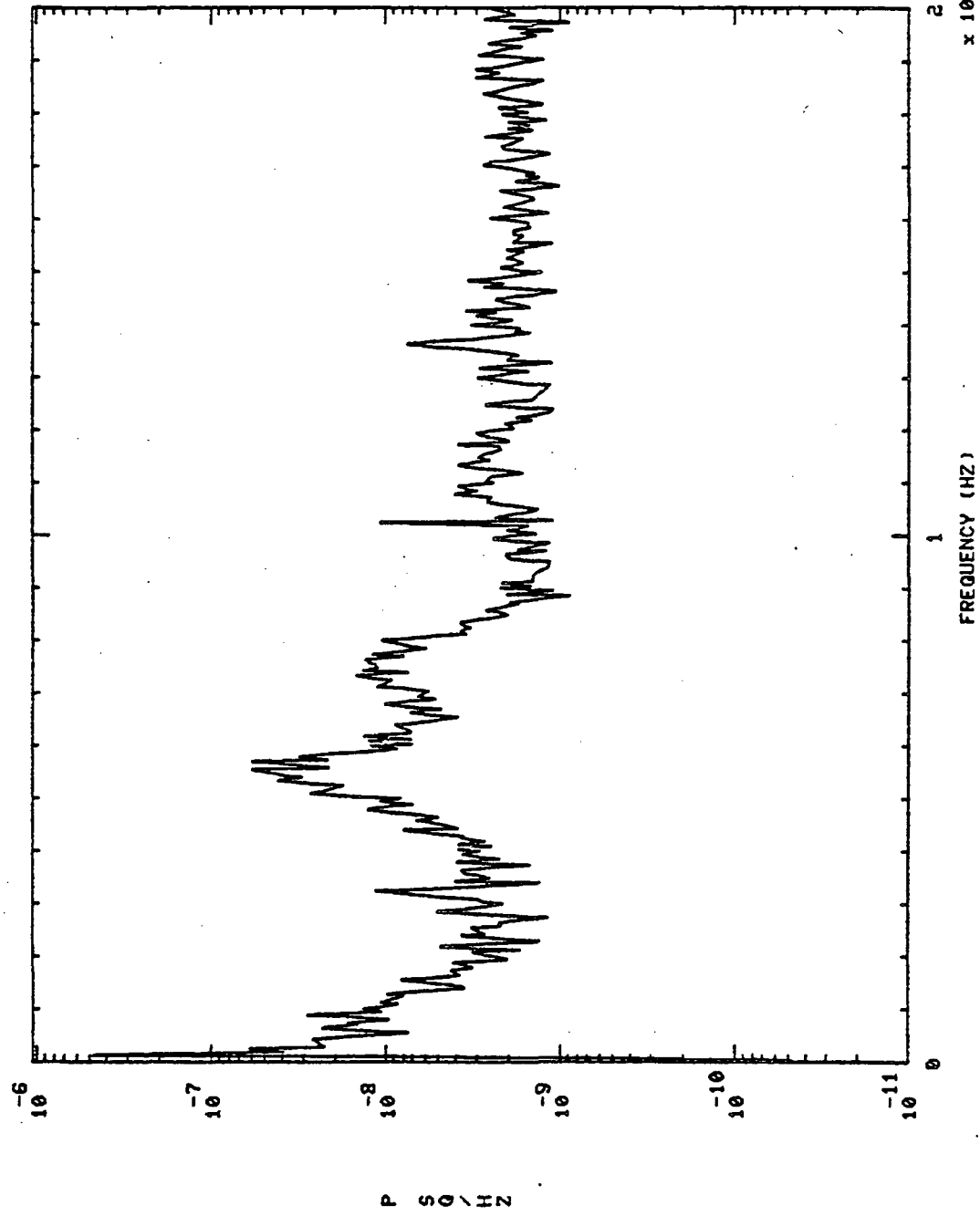


901319 OPB PC PR DC S+ 95.01140,'S

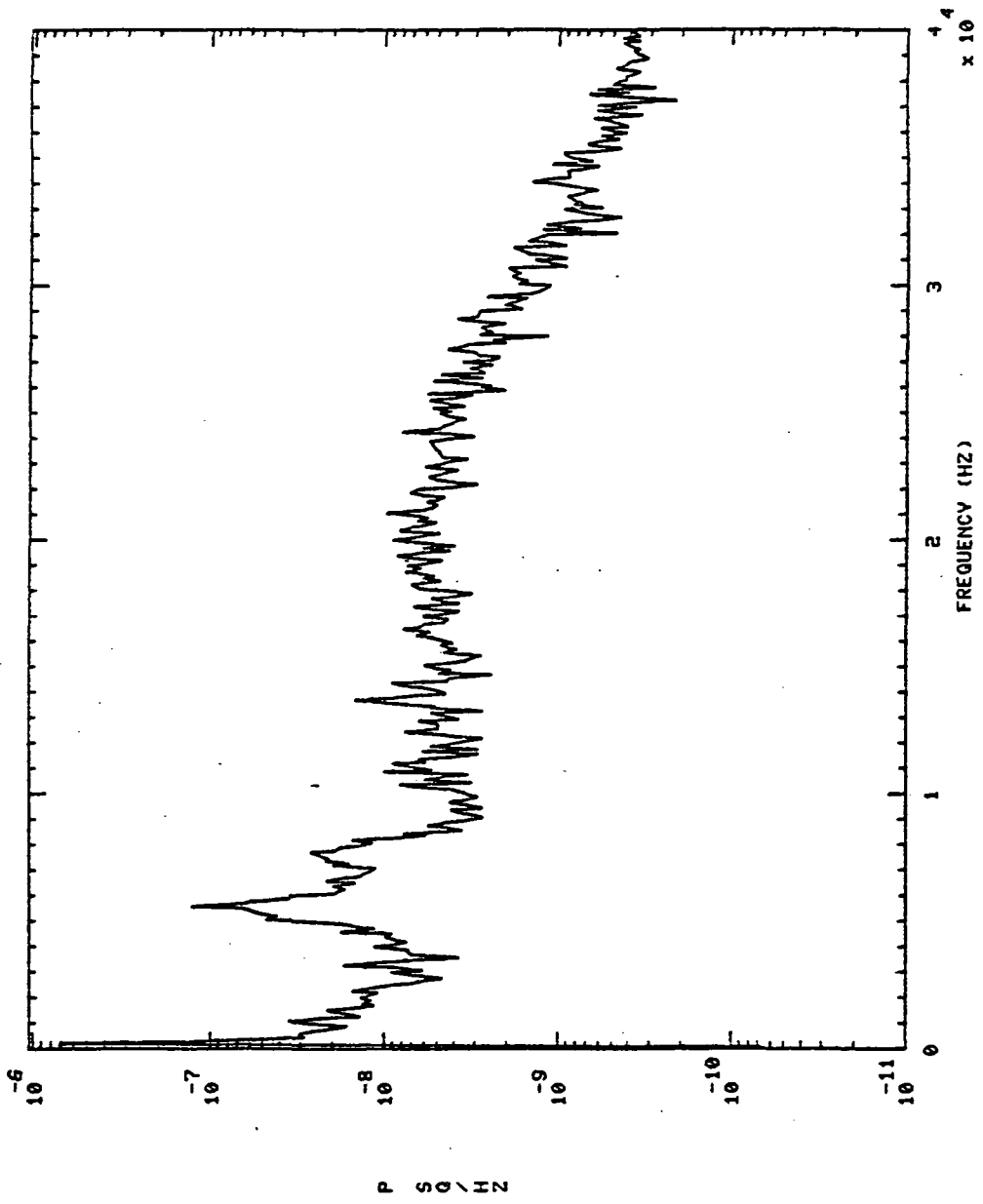


P S O \ H N

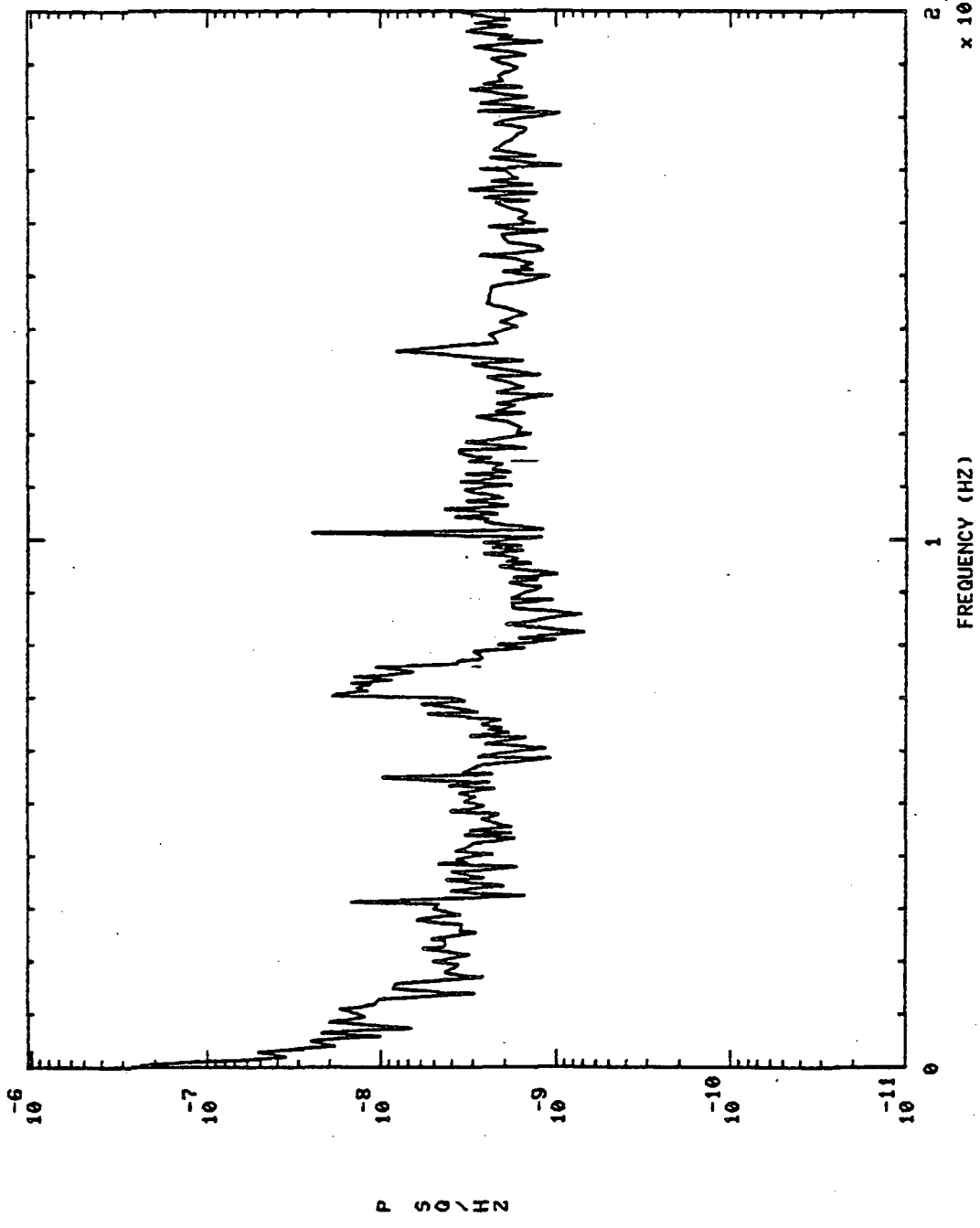
901321 MCC HOT GAS IN PR S+ 6.01H0.'S



901321 MCC HOT GAS IN PR S+ 6.01H0,'S

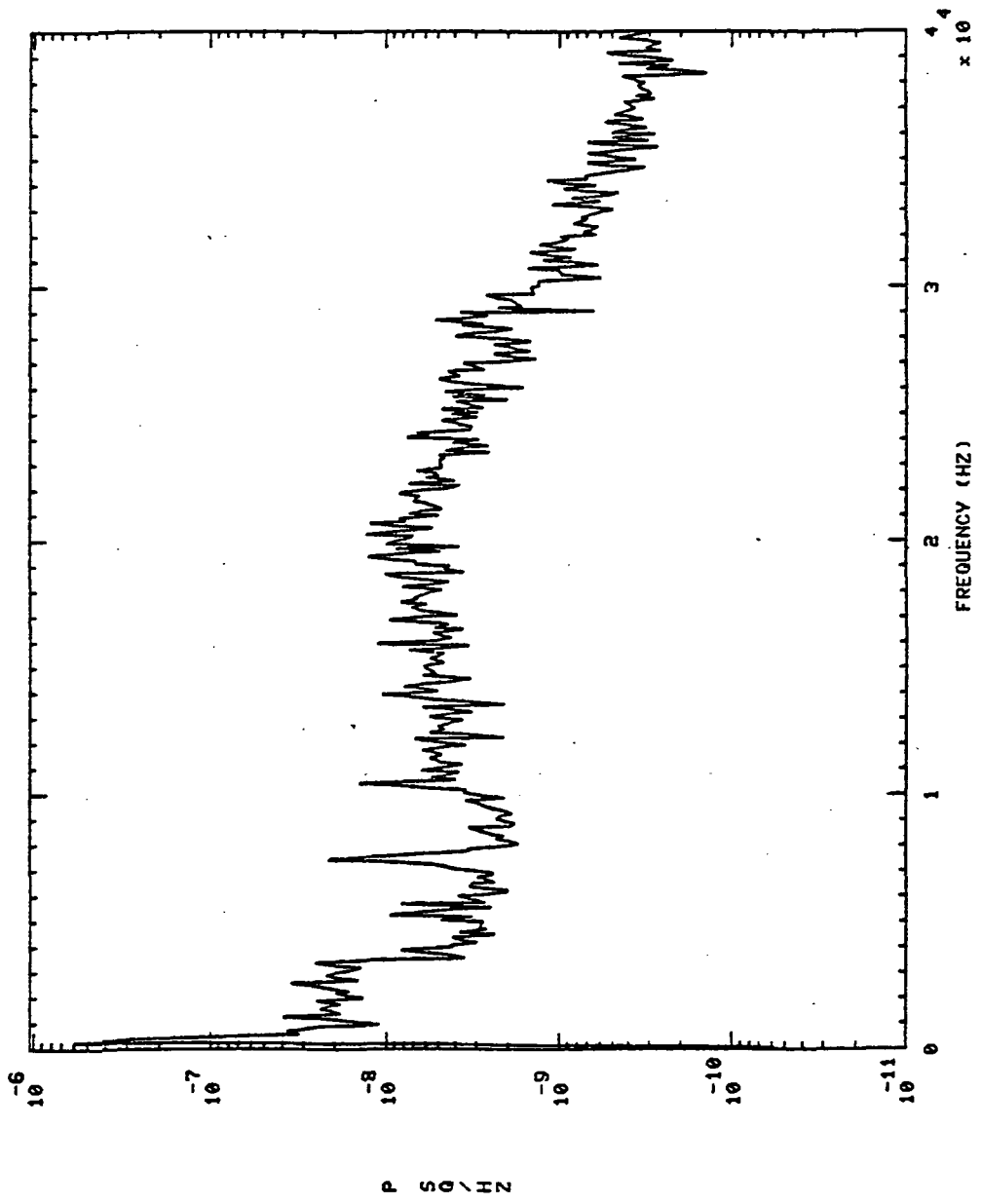


901321 MCC HOT GAS IN PR S+ 30.01H0,'S



901321 MCC HUT GAS IN PR S+ 30.01H0,'S

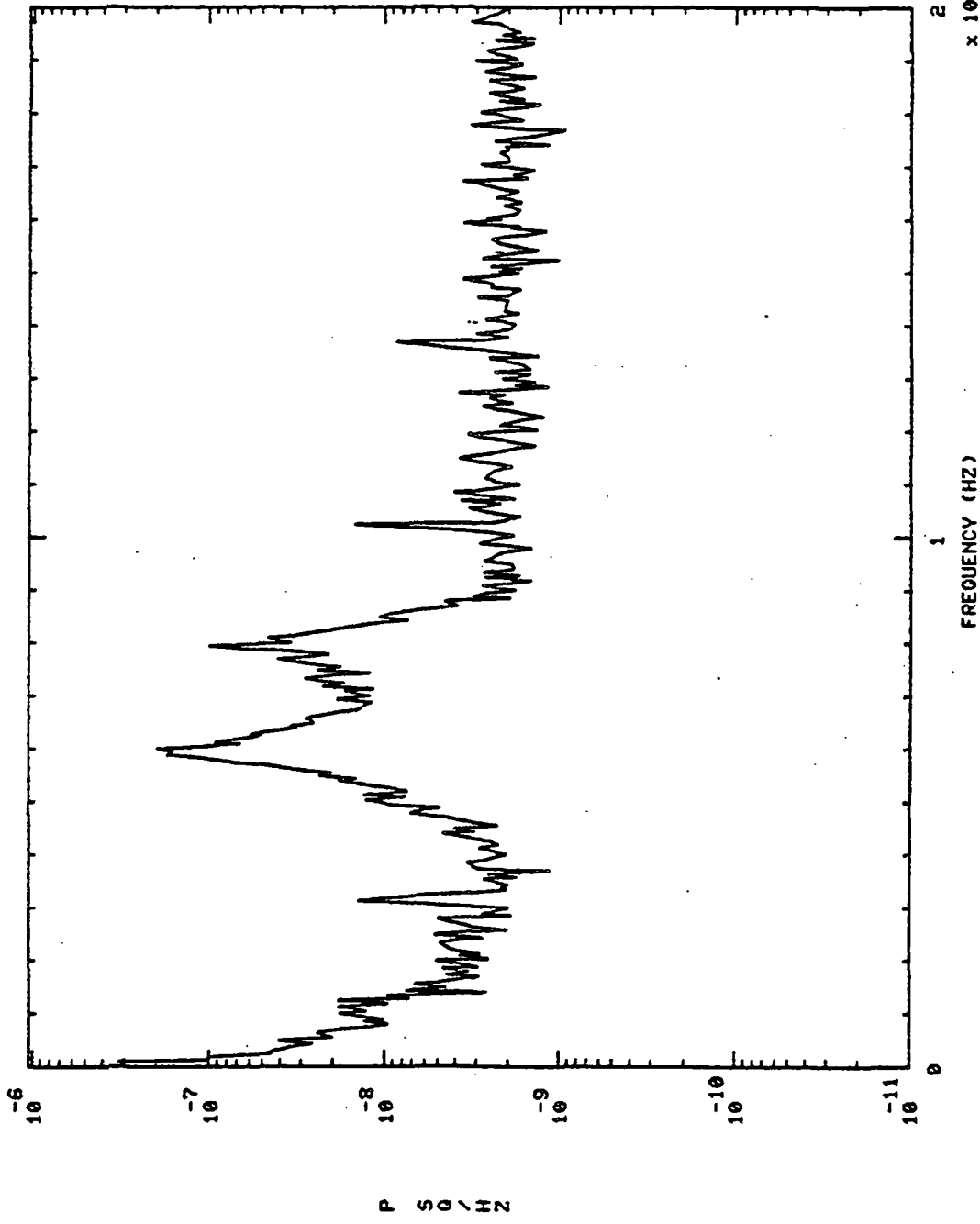
901321 MCC HUT GAS IN PR



S+ 90.01H0,'5

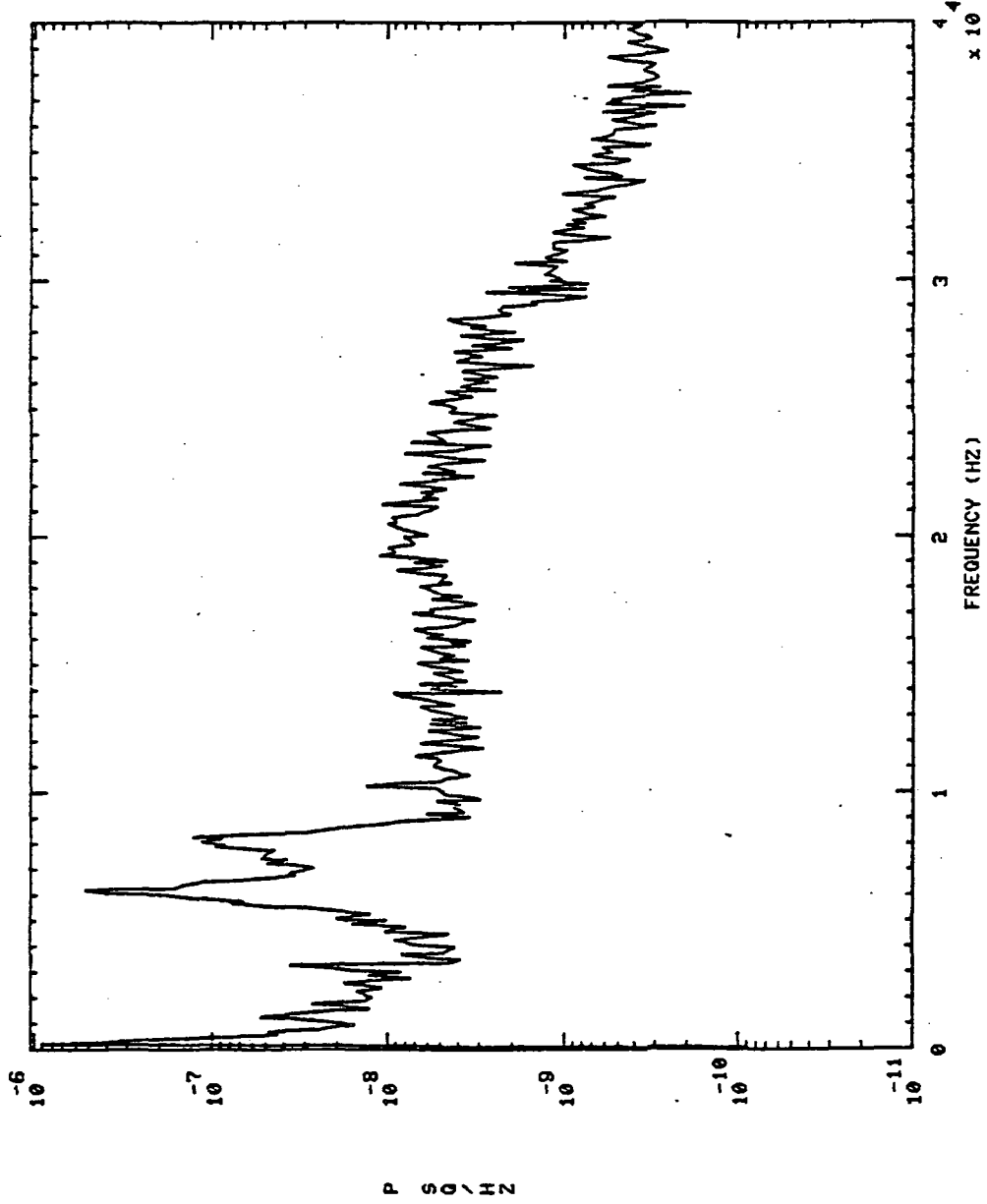
MCC HOT GAS IN PR

901321

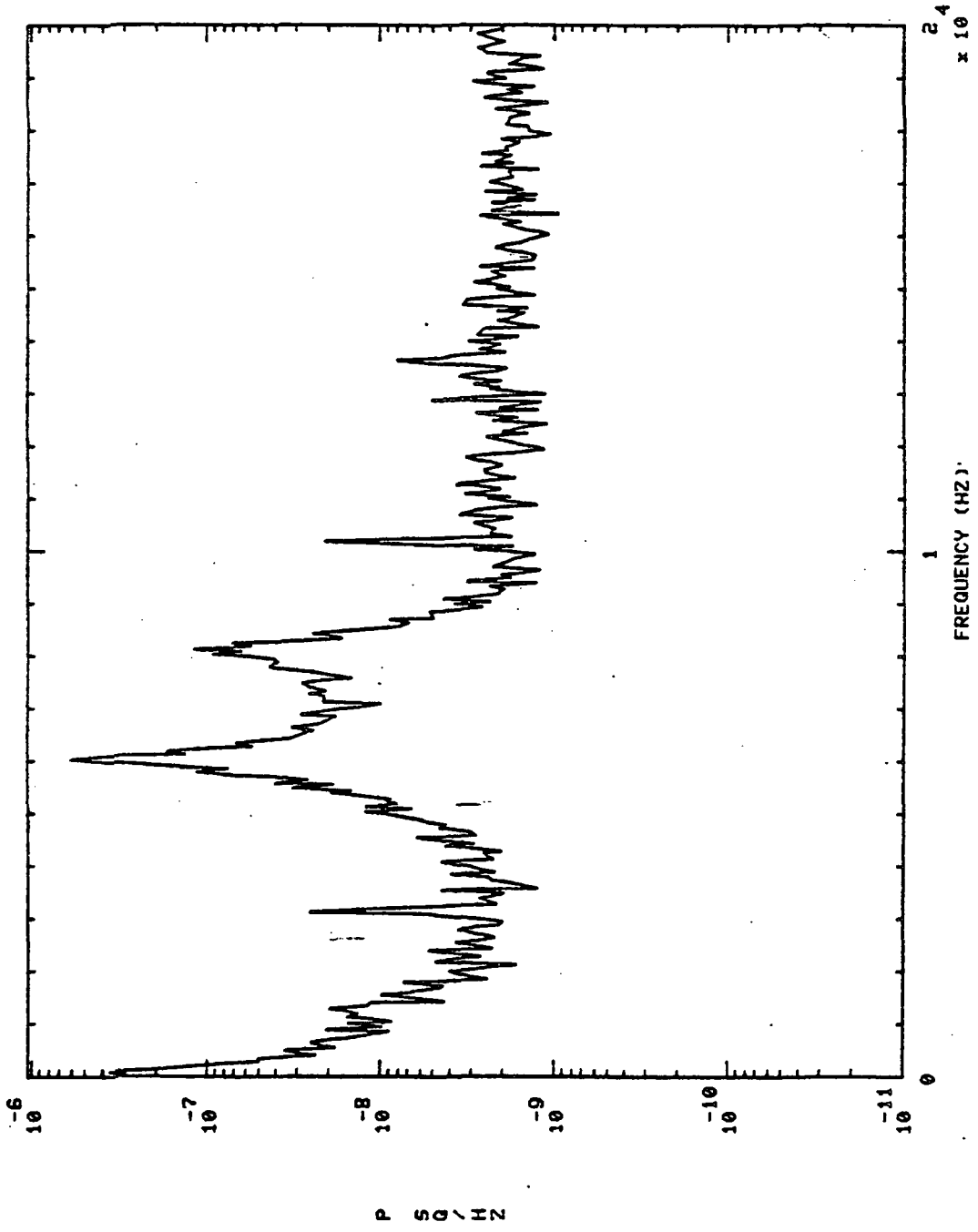




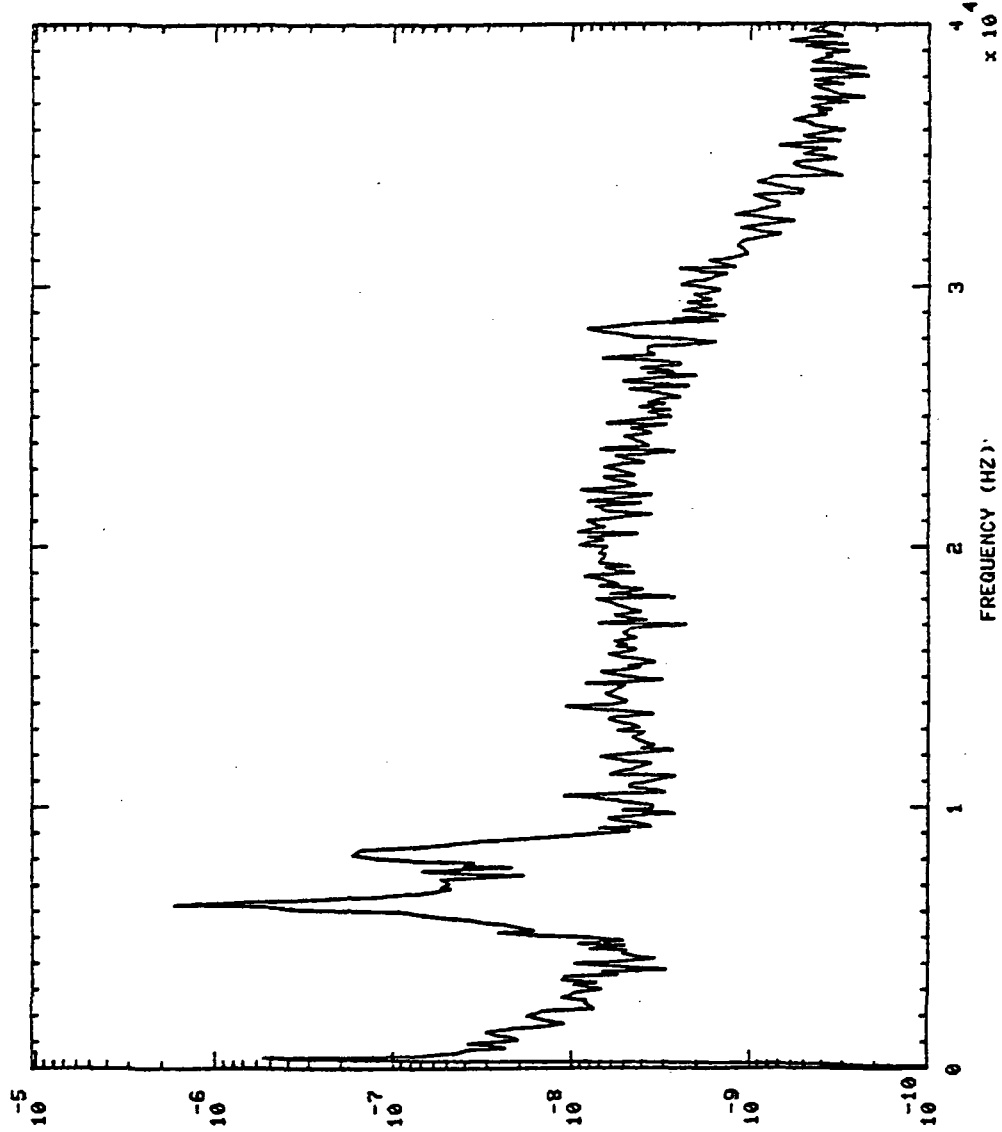
901321 MCC HOT GAS IN PR S+ 90.01H0,'S



901321 MCC HOT GAS IN PR S+ 100.01NO,'S

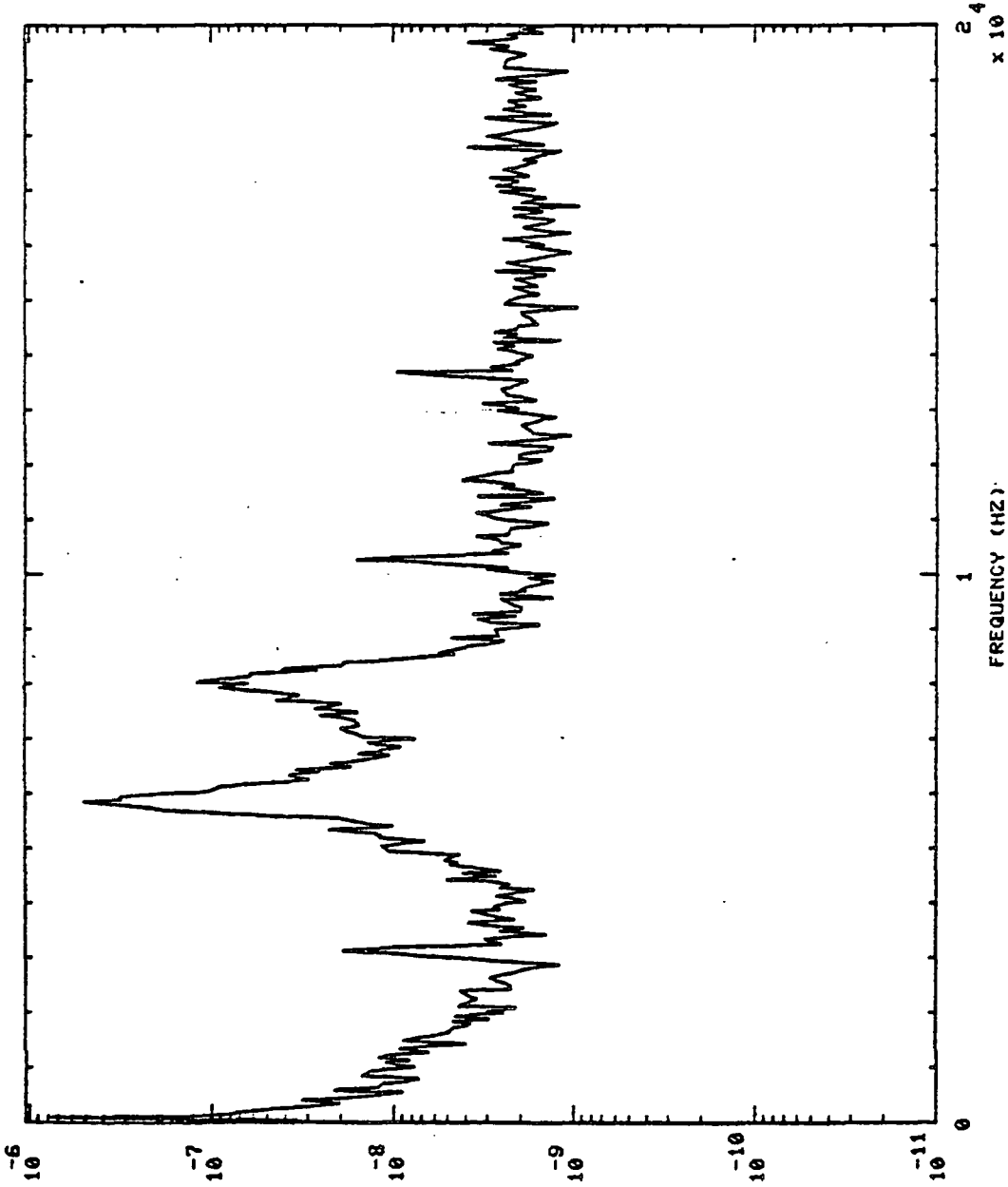


901321 MCC HOT GAS IN PR S+ 180.01H0,'S



P S Q / H Z

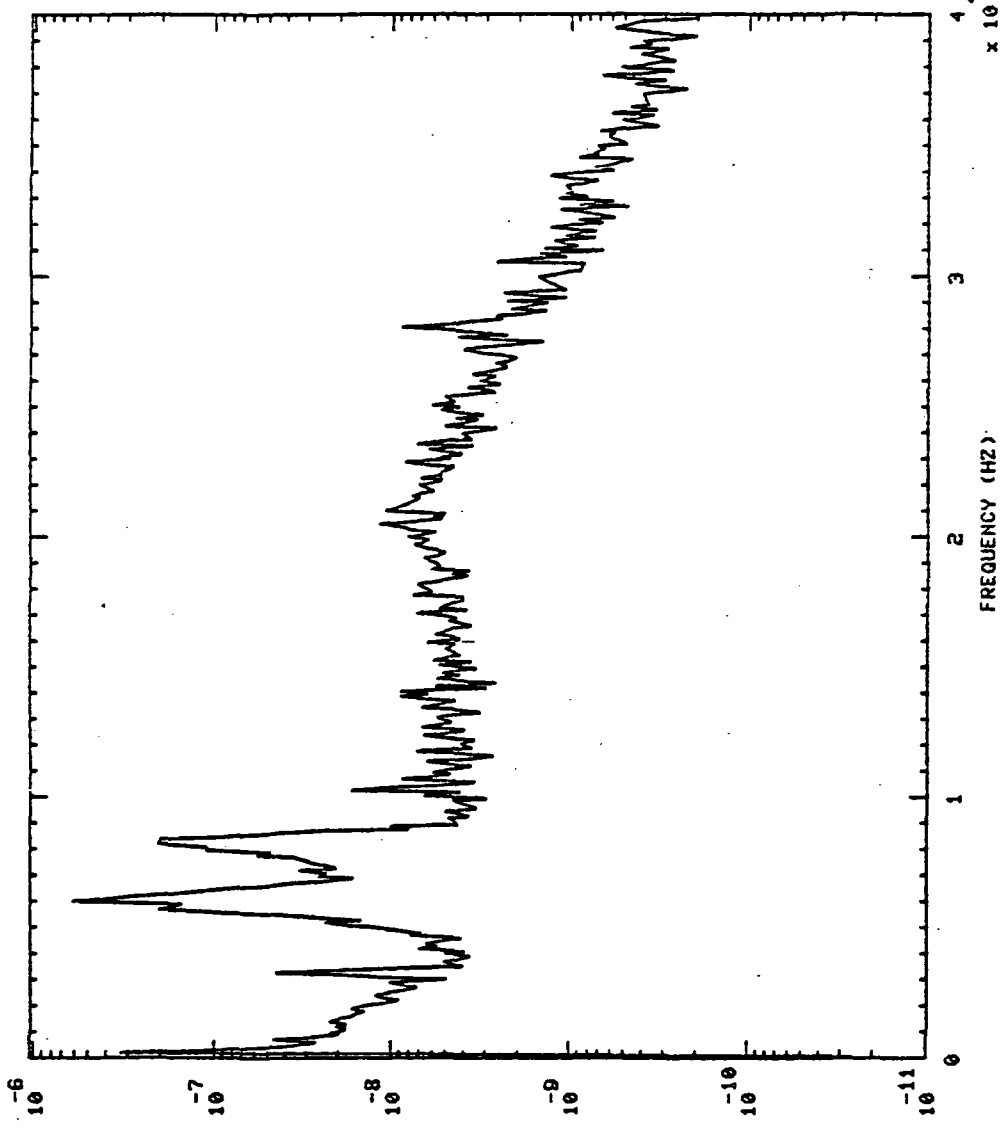
901321 MCC HOT GAS IN PR S+ 270.01H0.'S



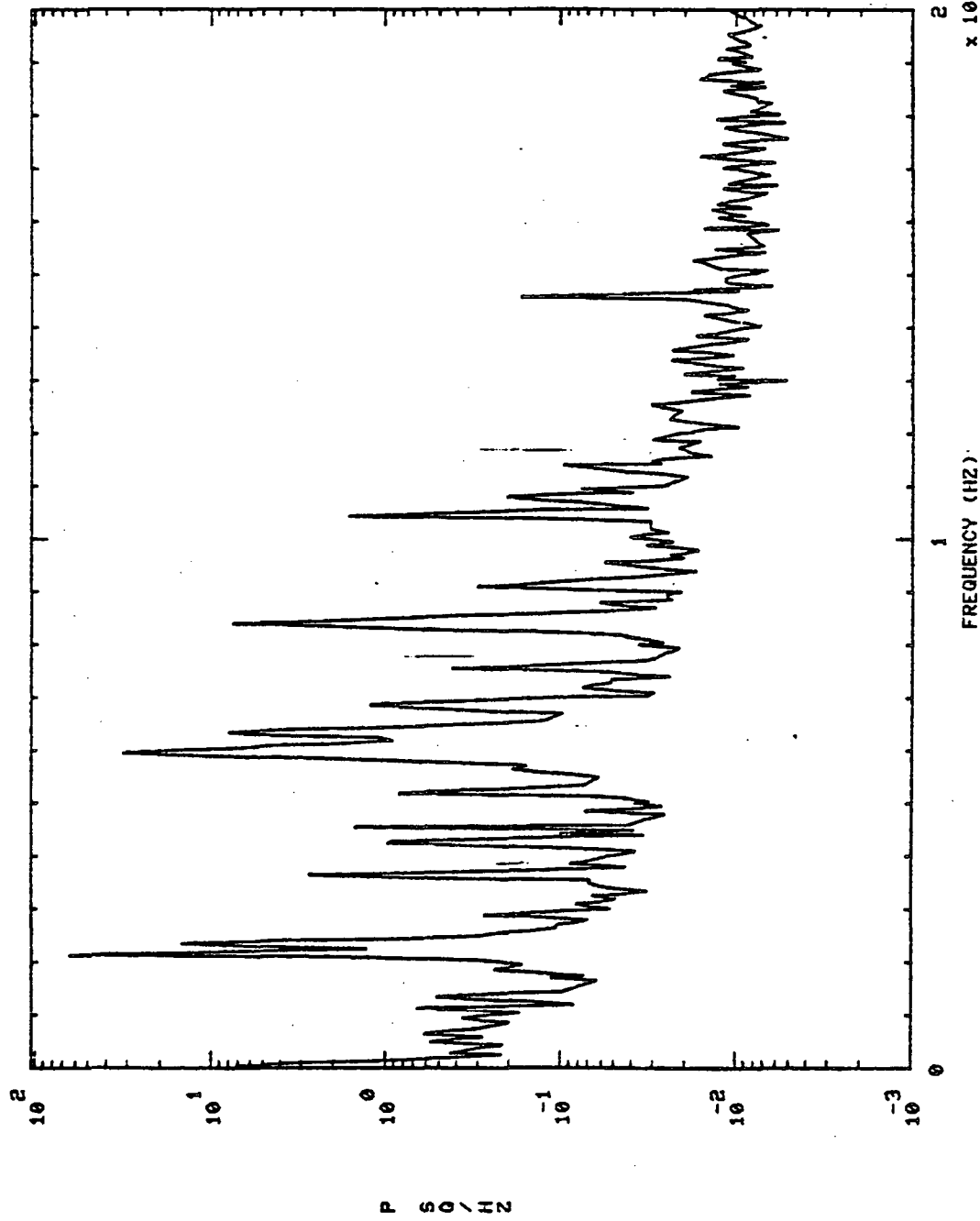
S+ 270.0140.'S

MCC HOT GAS IN PR

901321

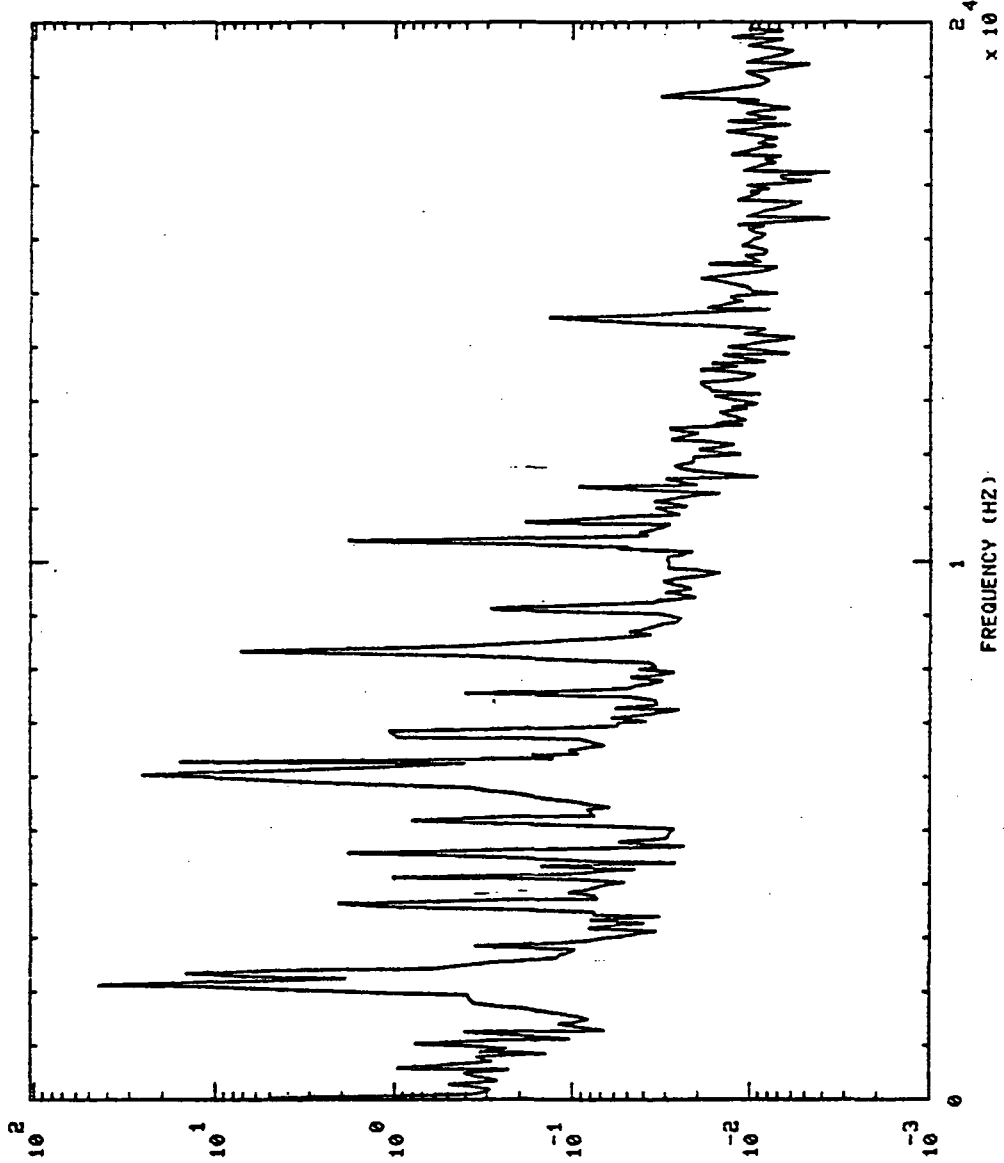


901321 FFB PC S+ 6.01H0,'S



S+ 30.0110,'S

901321 FPB PC



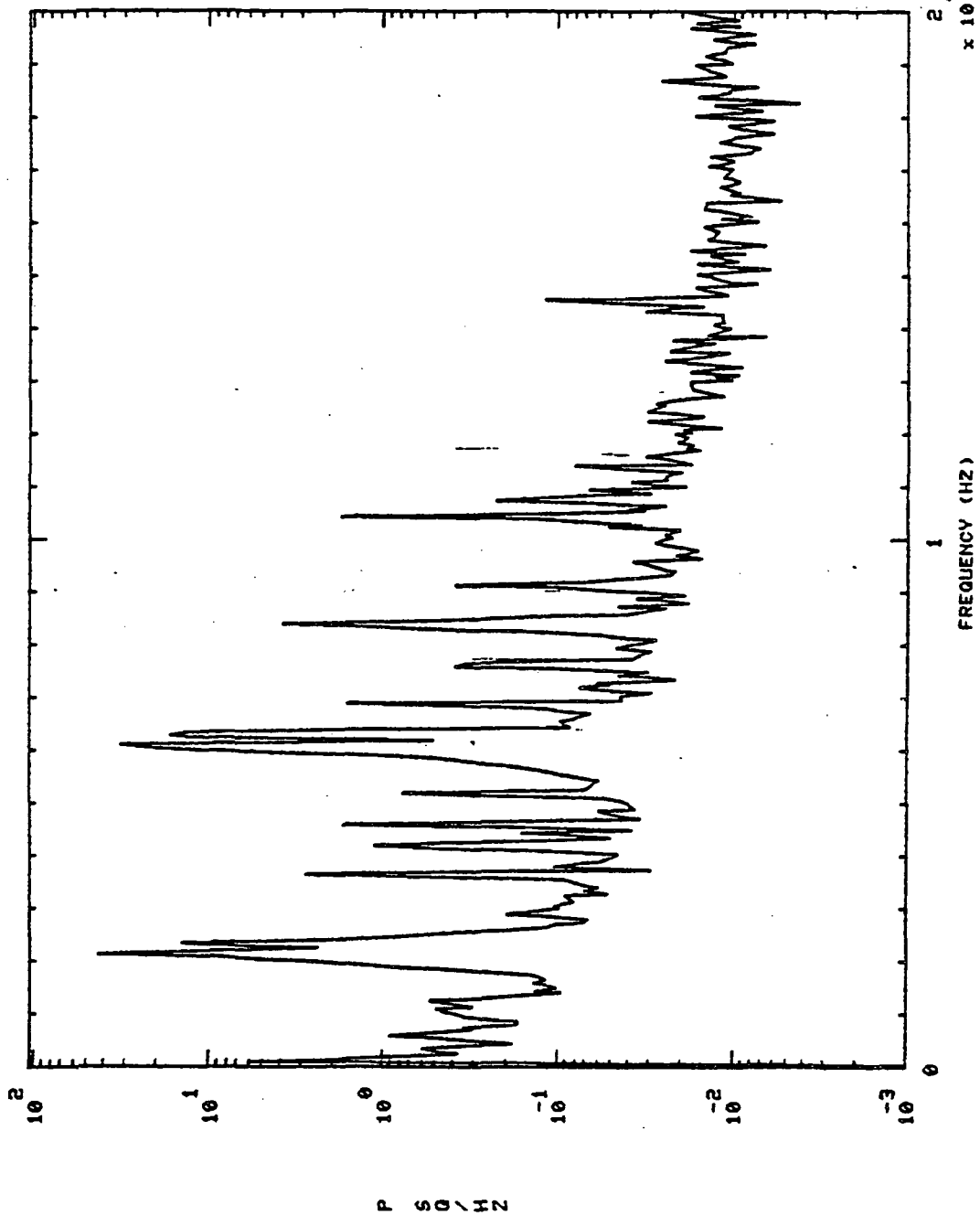
P SO / HZ

FREQUENCY (HZ)

$\times 10^4$

S+ 90.01H0,'S

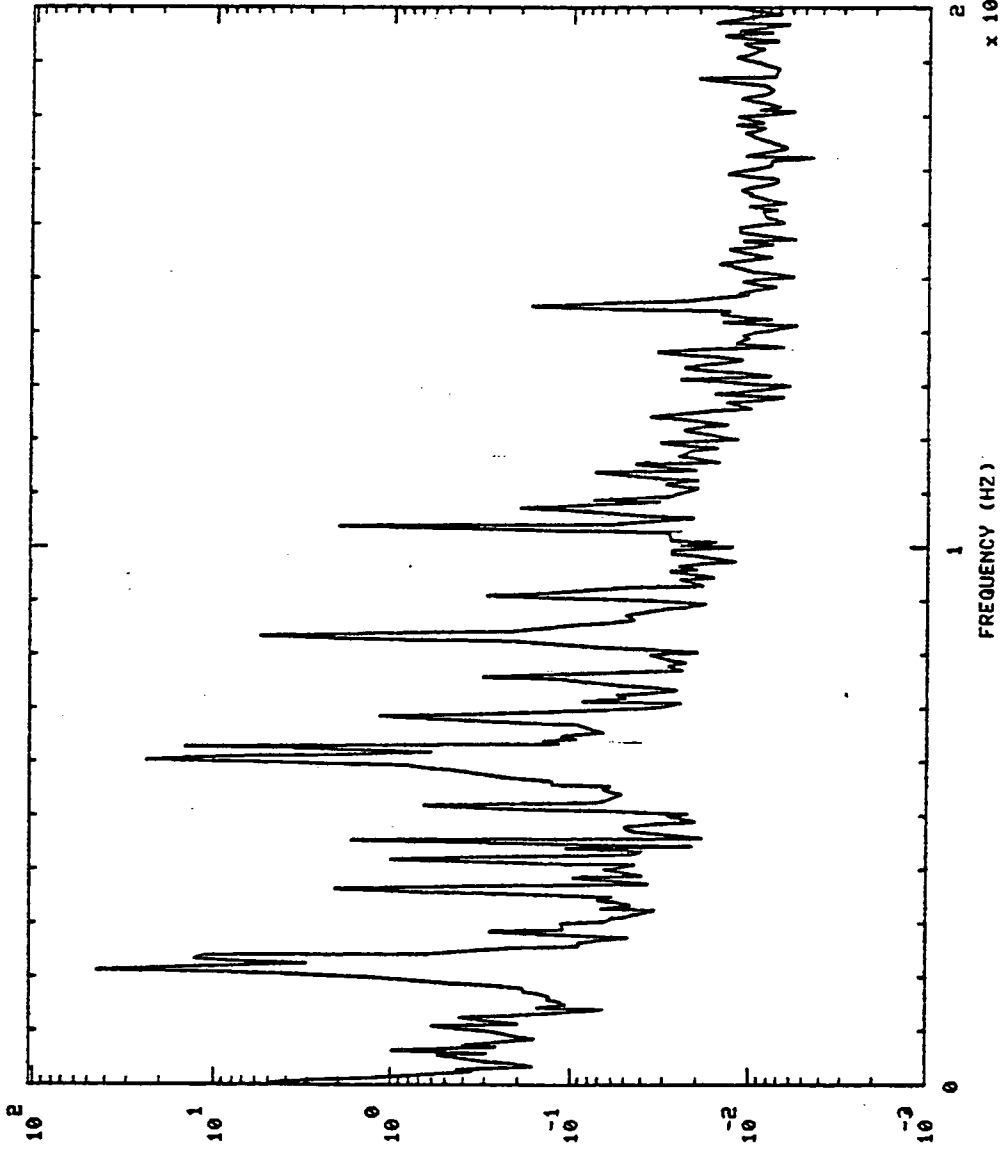
9013E1 FPB PC





901321 FFB PC S+ 100.01HG,'S

901321 FFB PC



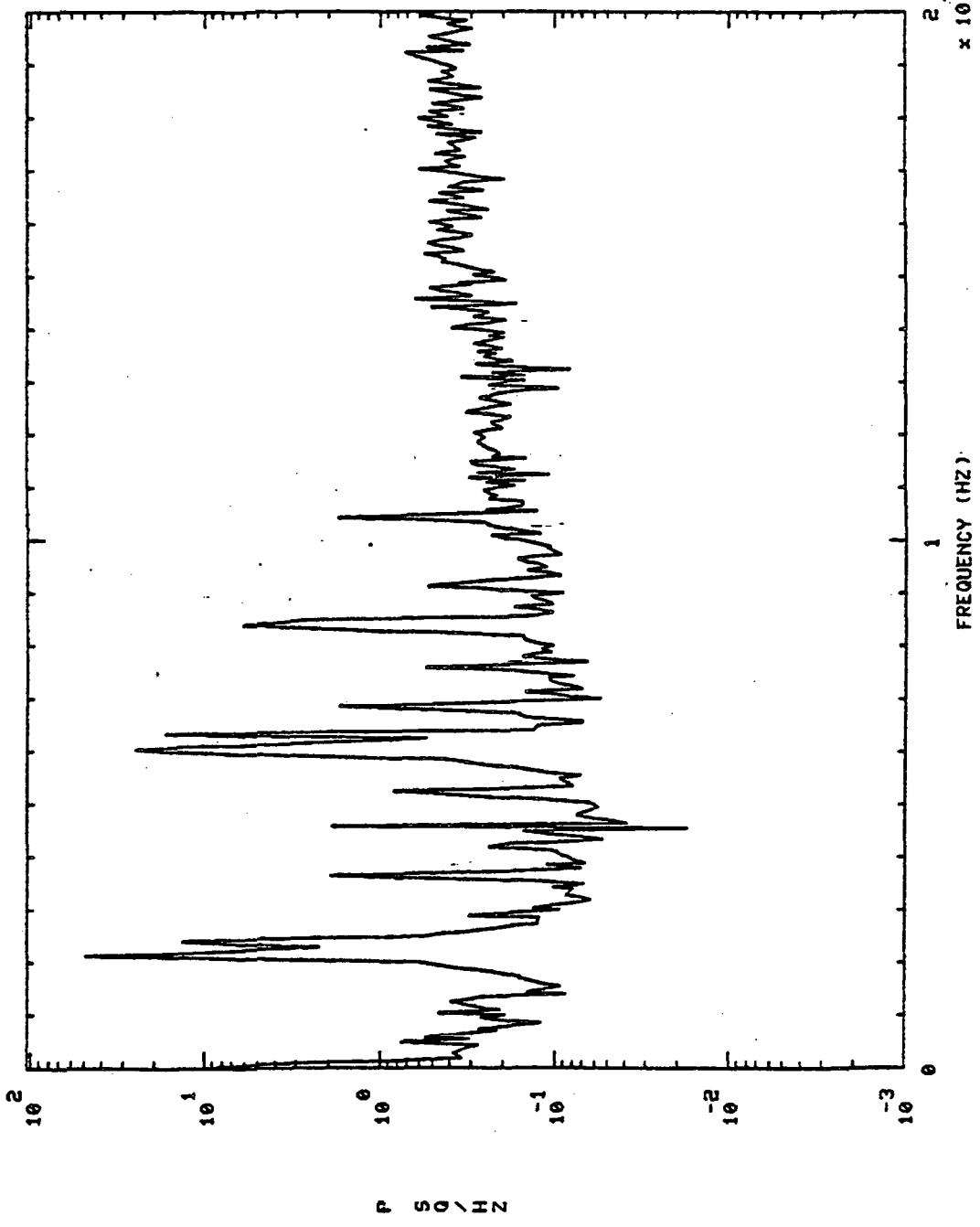
PSD / HZ

FREQUENCY (HZ)

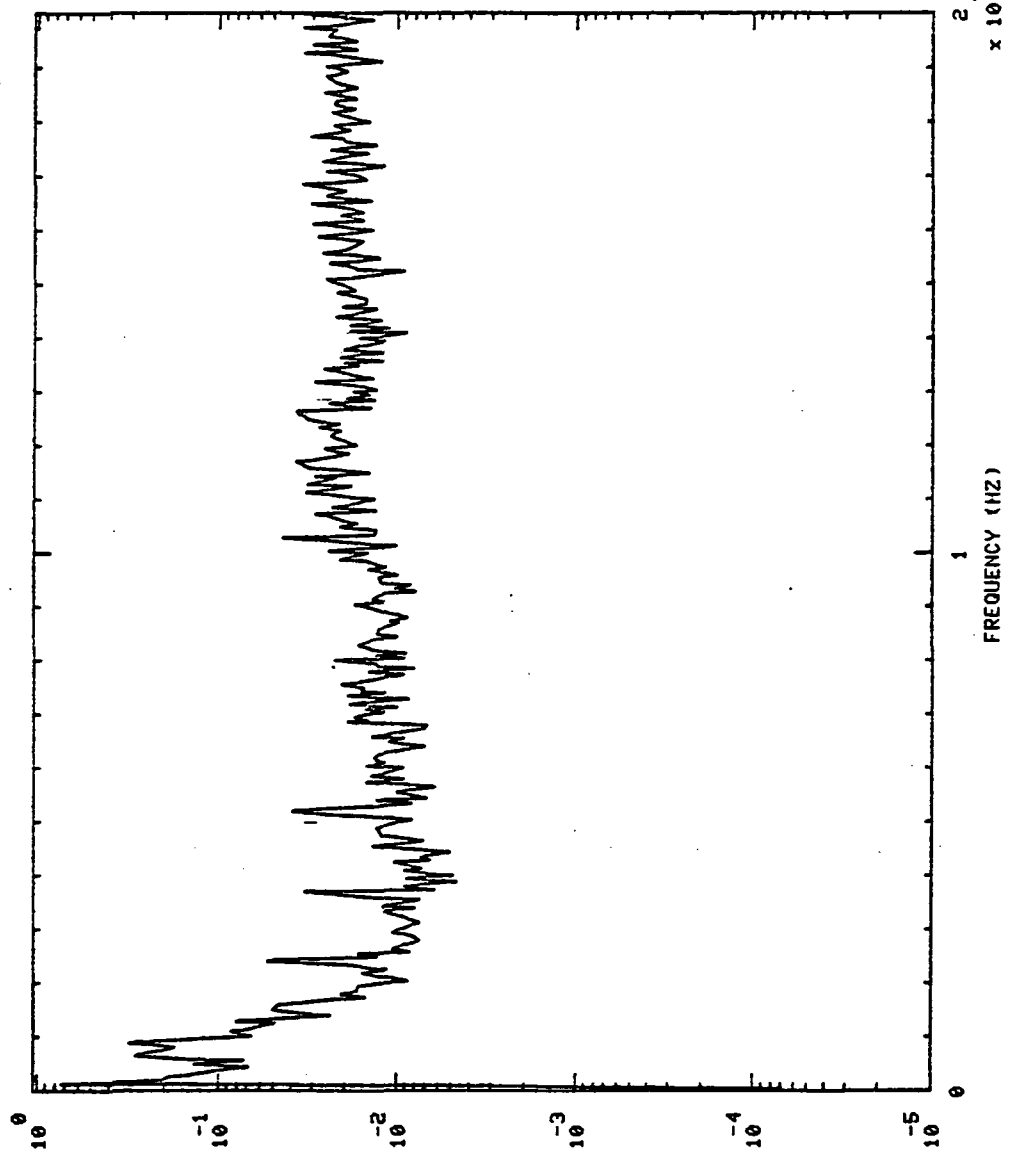
$\times 10^4$

S+ 270.01H0,'S

901321 FPB PC



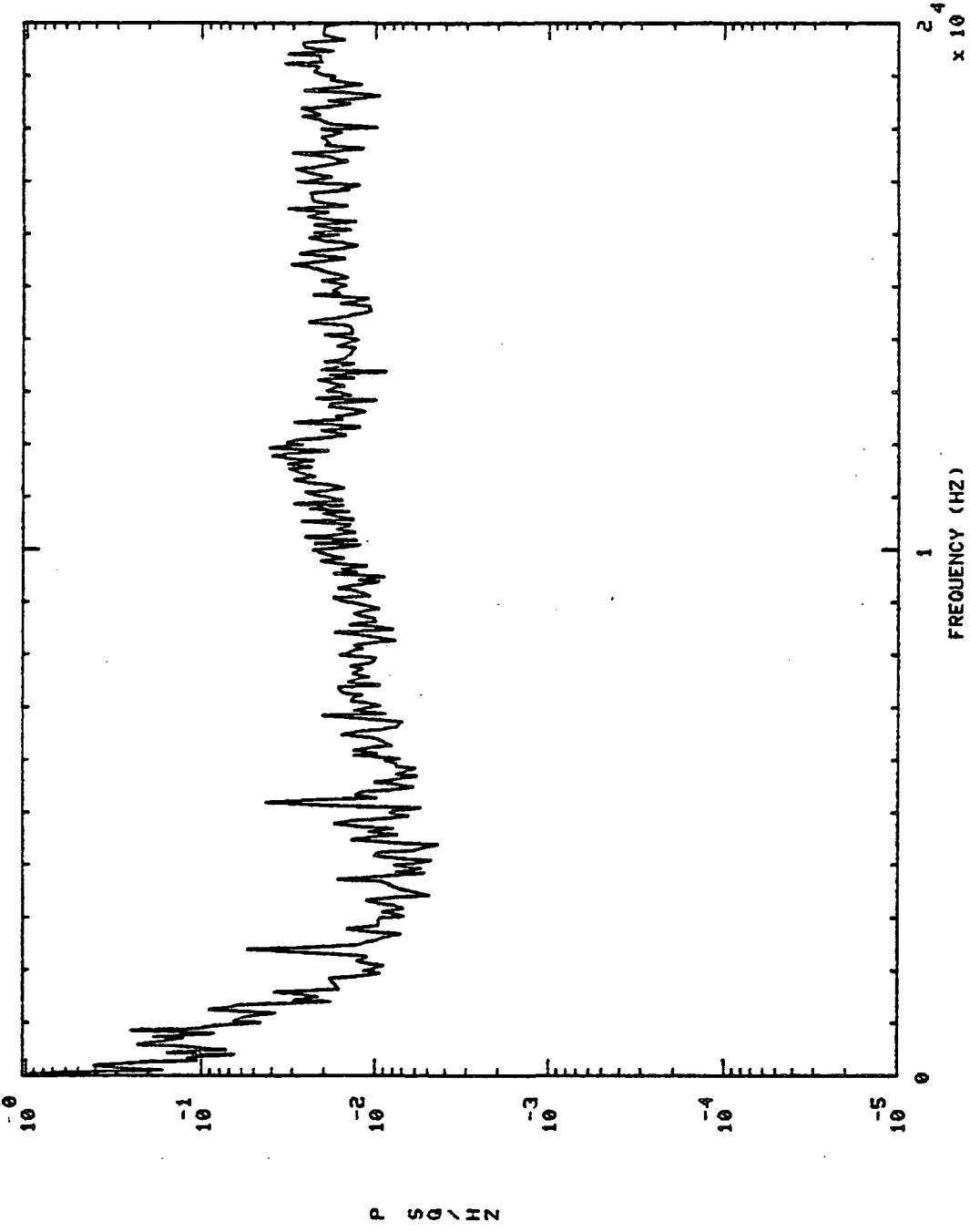
901321 OPB PC PR DC S+ 6.01H0,'S



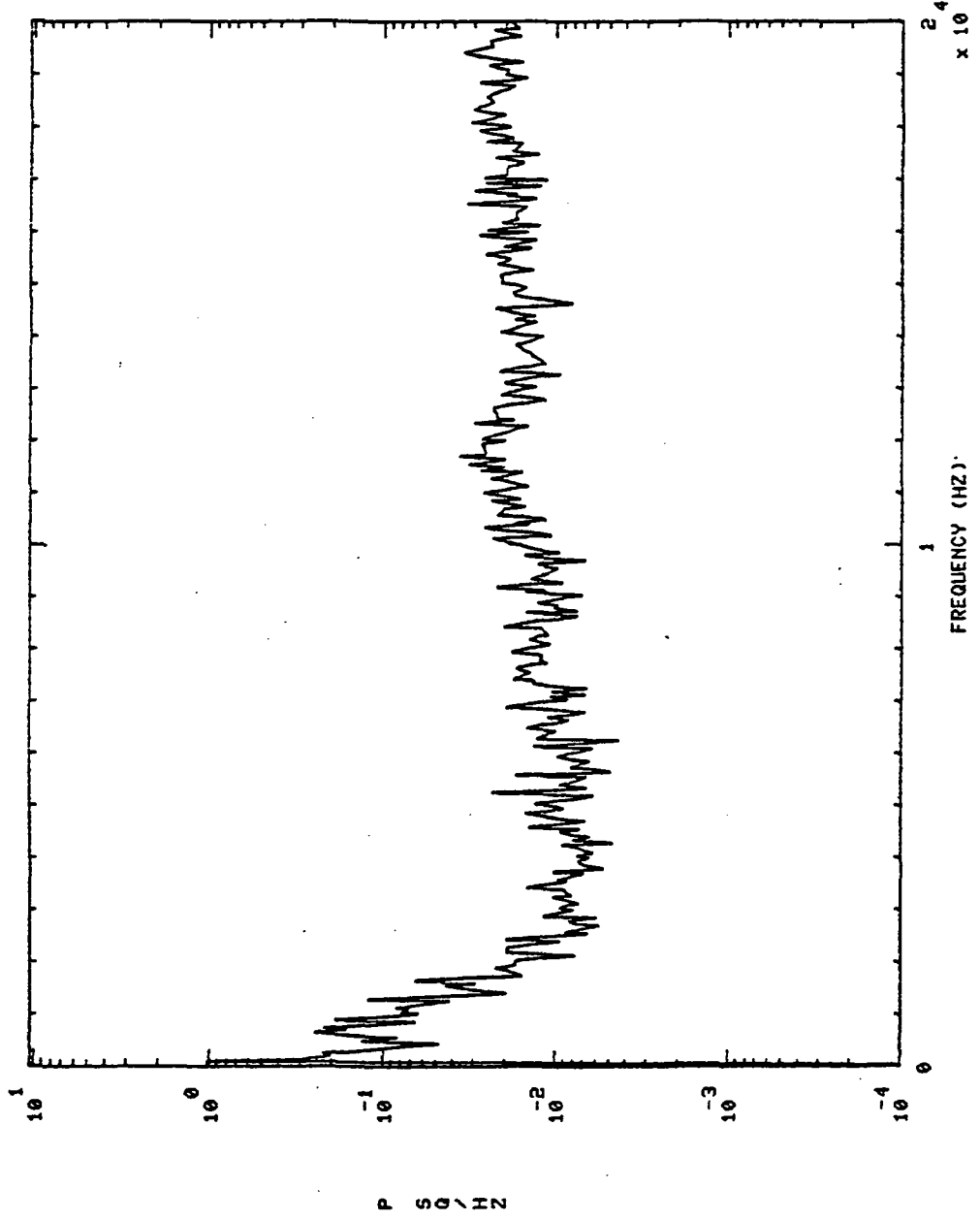
P S D

S+ 30.01H0,'S

901321 OPB FC PR DC



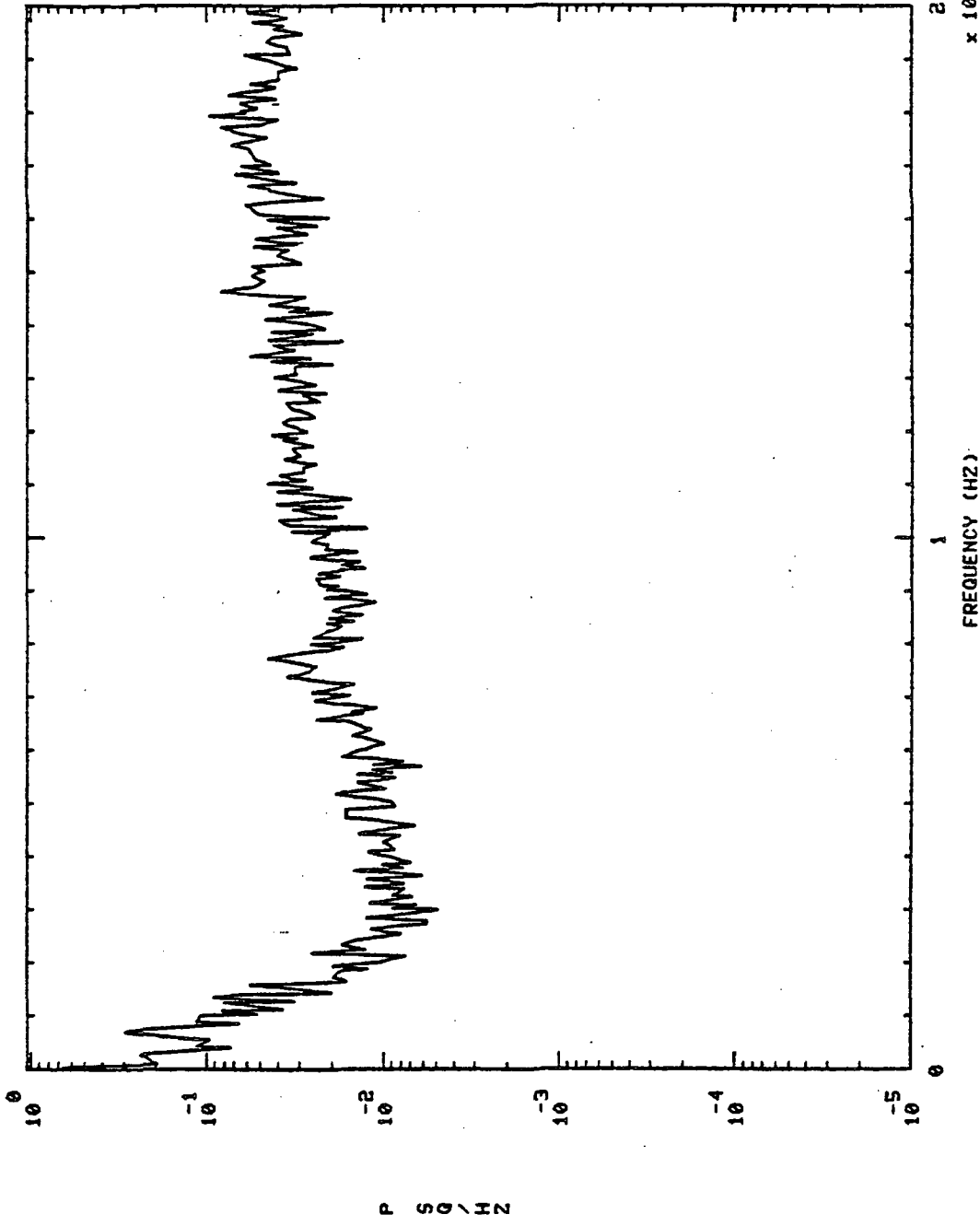
S01321 OPB PC PR DC S+ 90.01H0,'S



S+ 100.01H0,'S

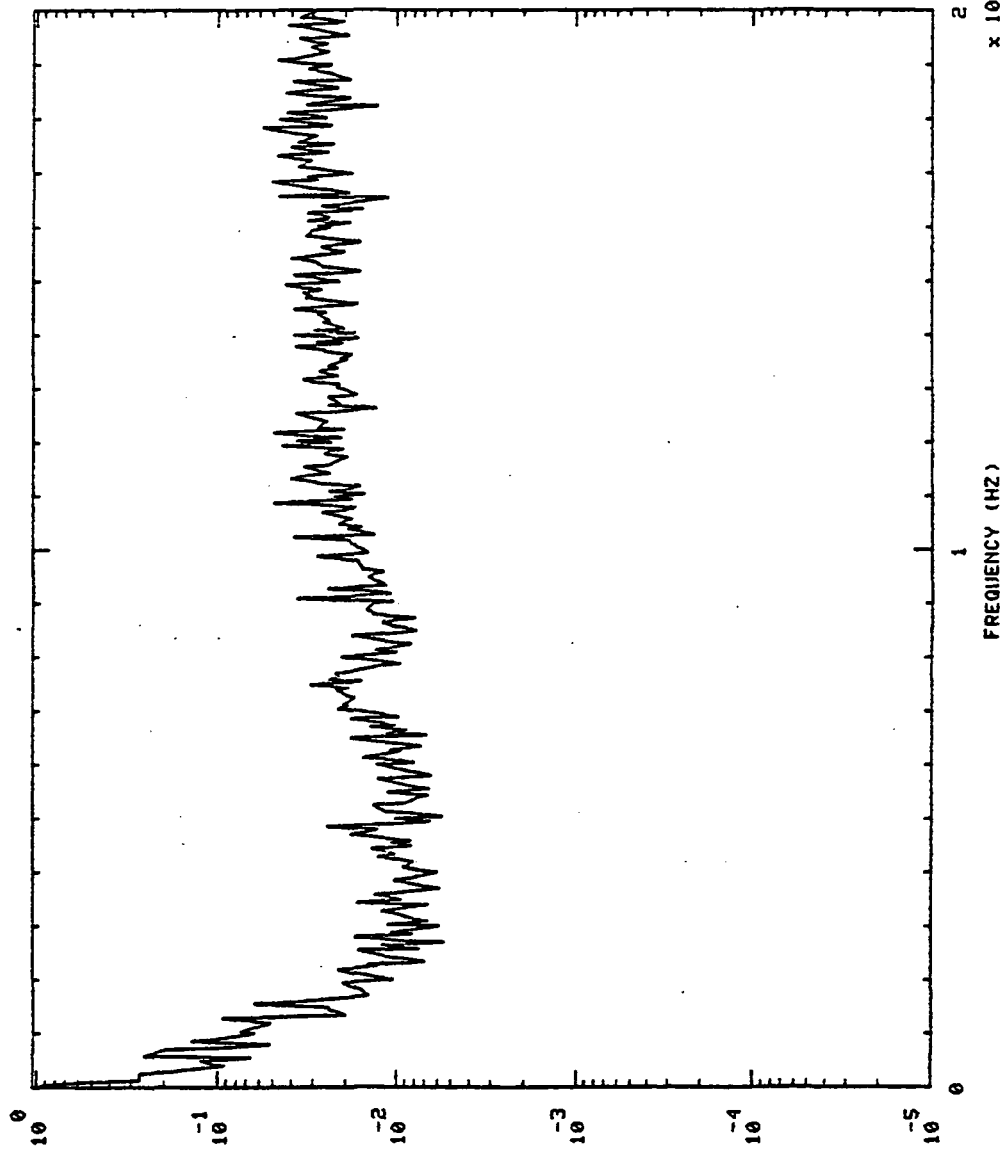
OPB PC PR DC

901321



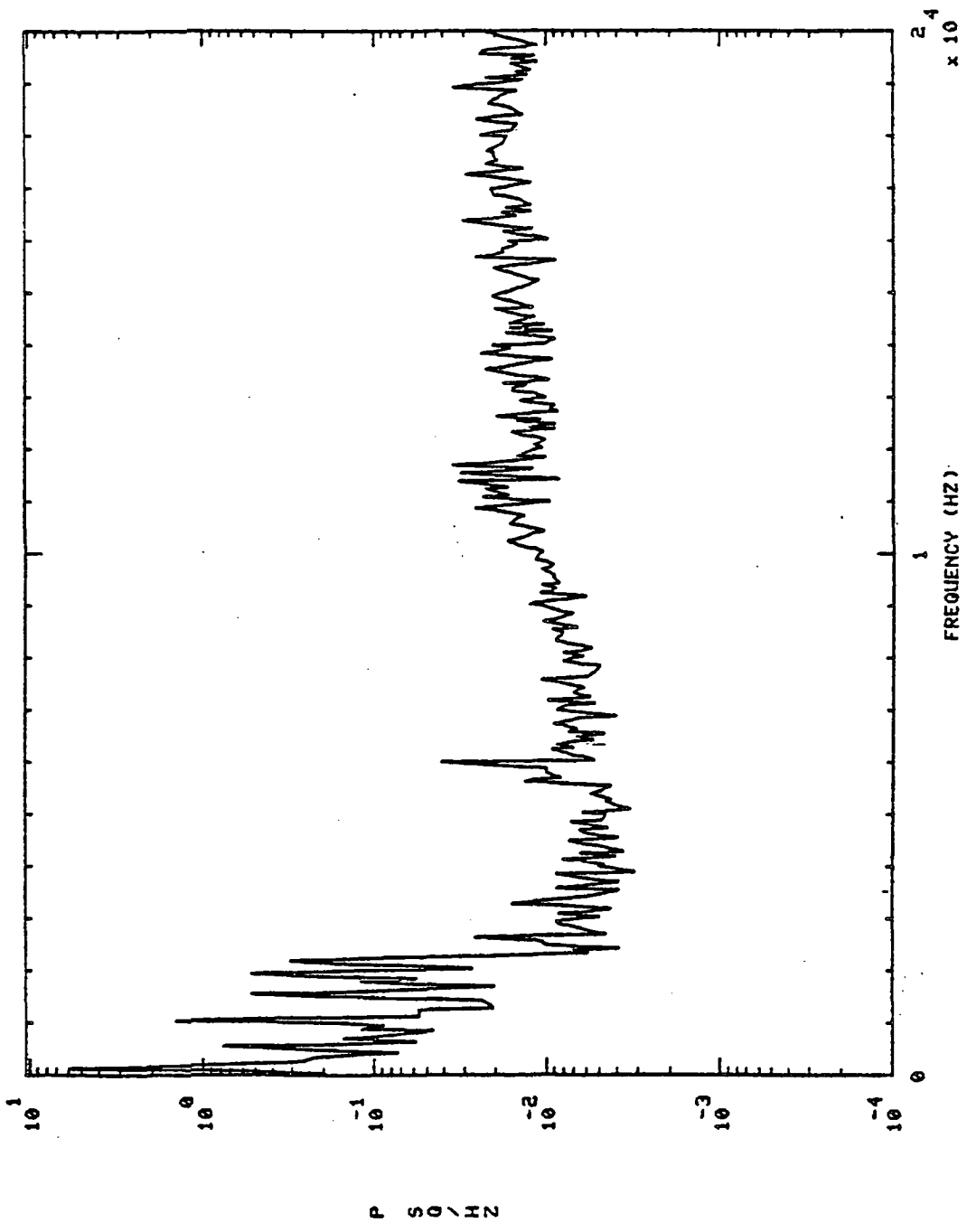
S+ 270.01140,'S

9013E1 OPB PC PR DC



P S O \ H Z

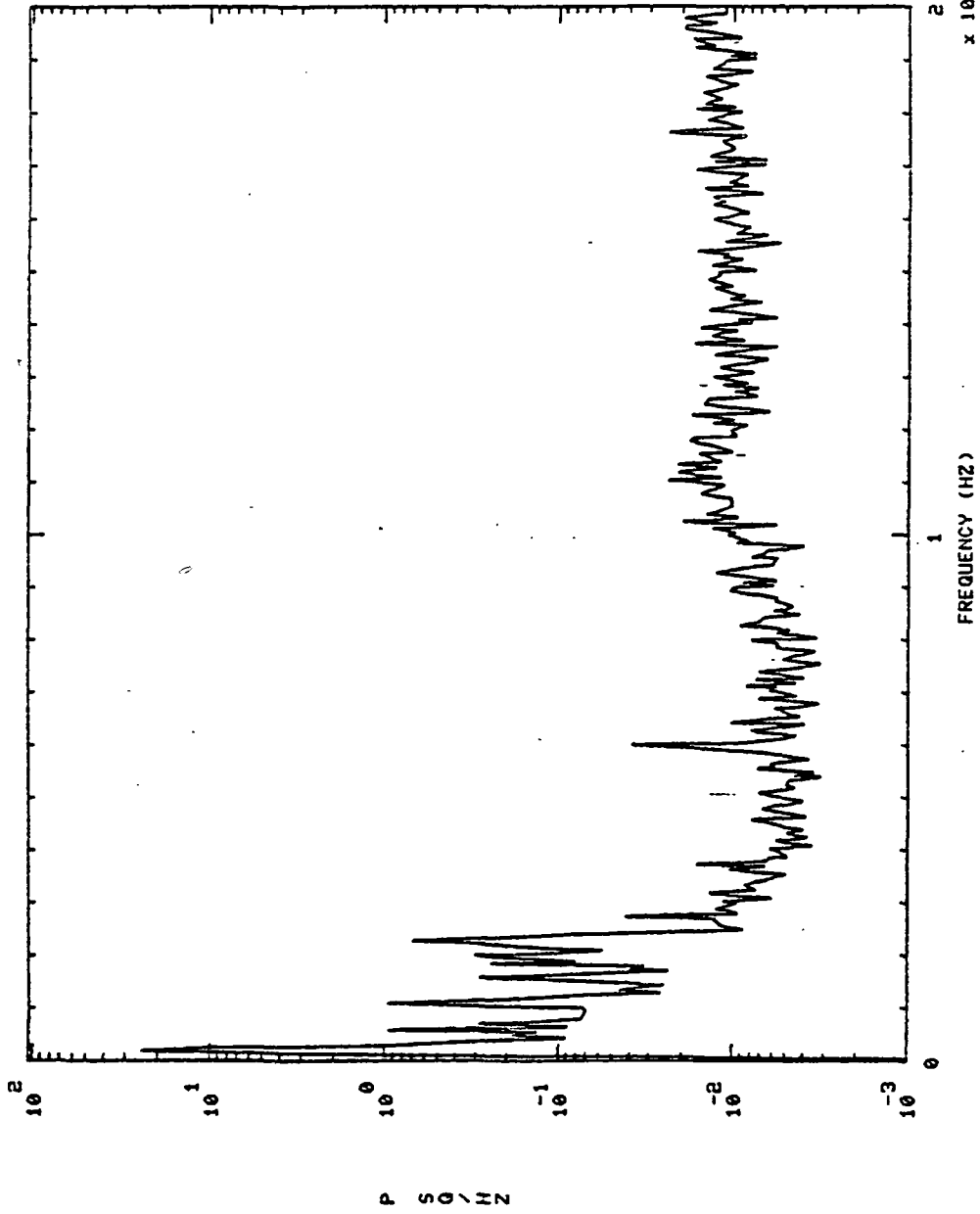
901322 HPOP DS PR S+ 6.01H0, 'S





S+ 130.01H0, 'S

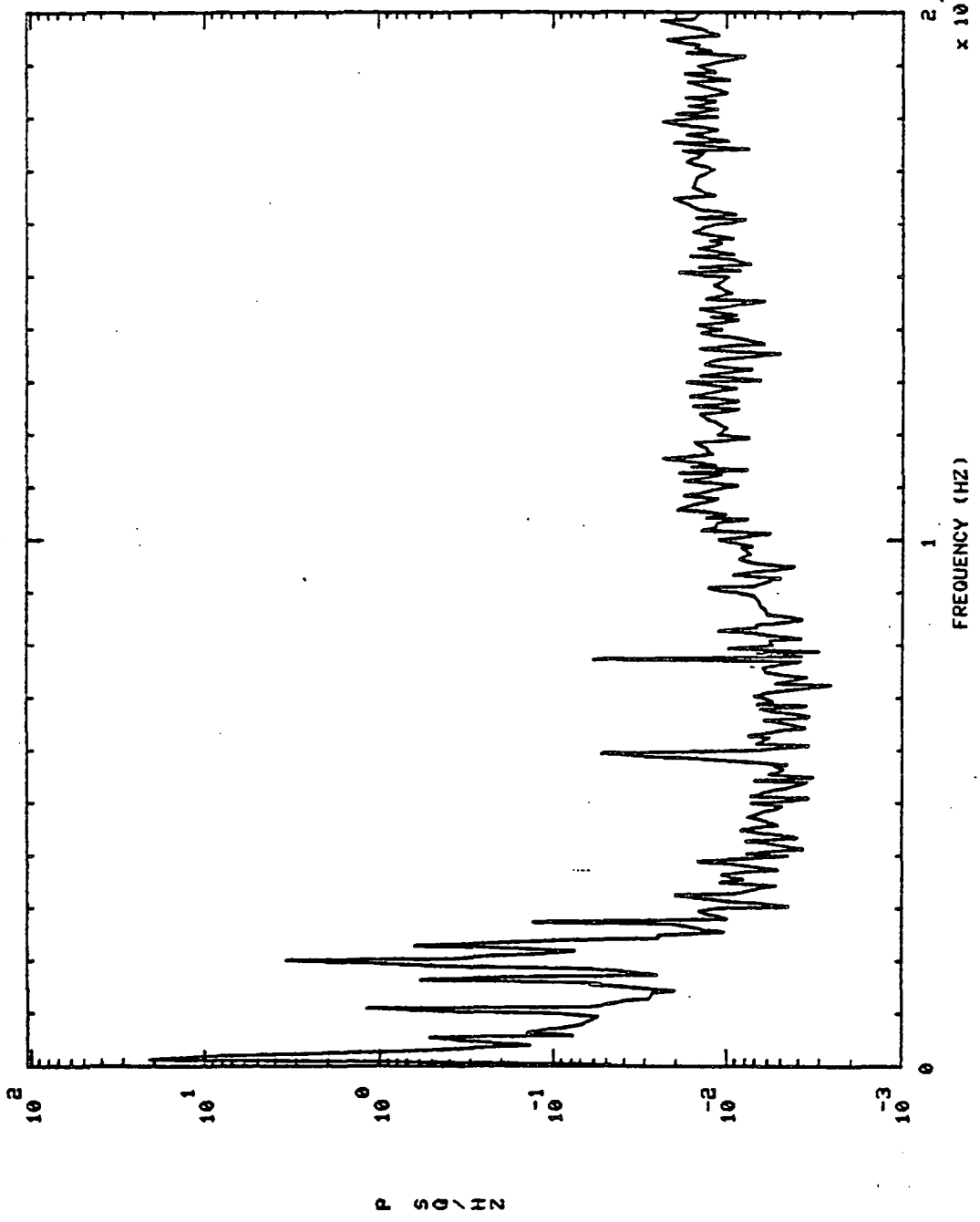
901322 HPOP DS PR



S+ 170.01H0,'S

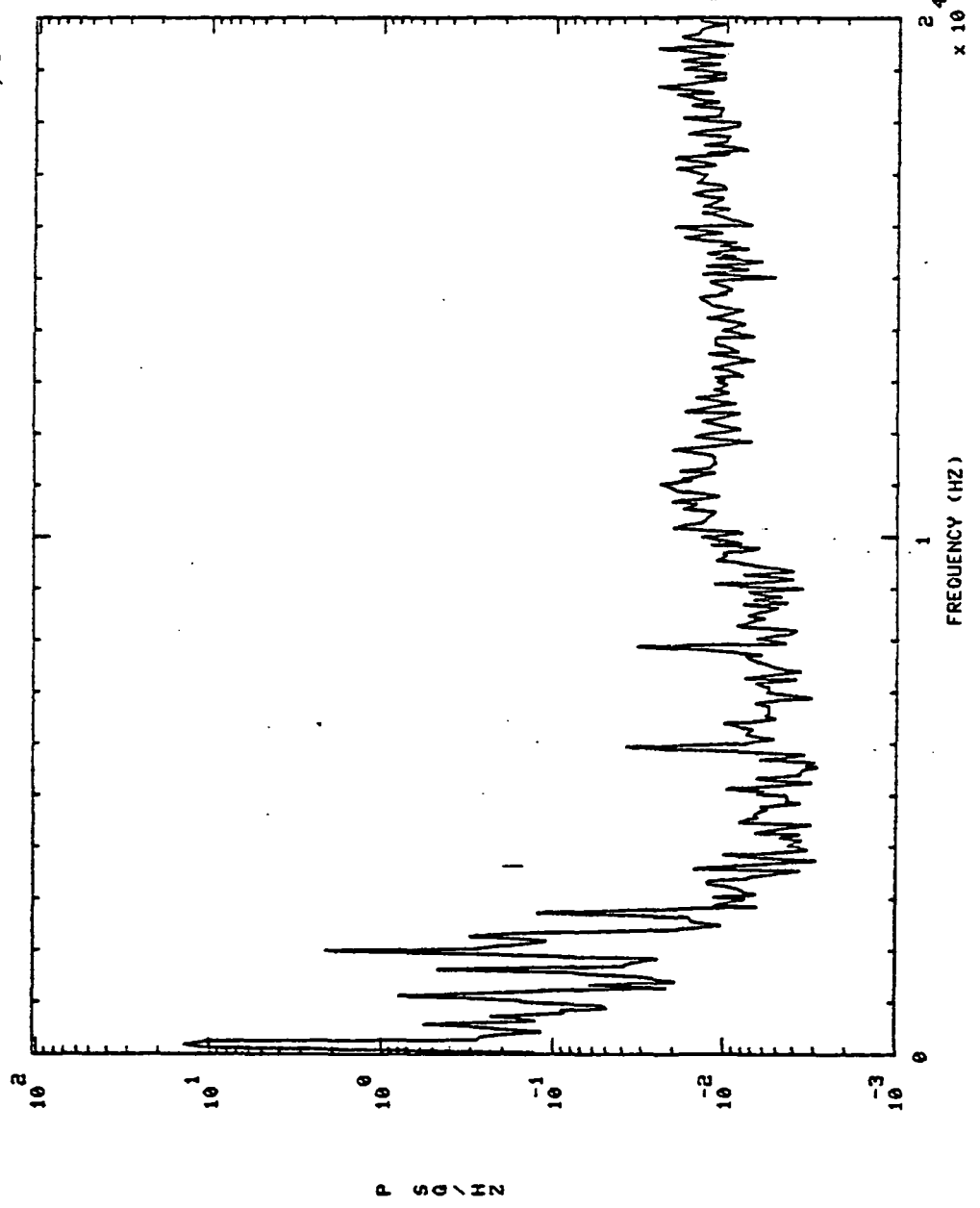
HPOP DS PR

801322



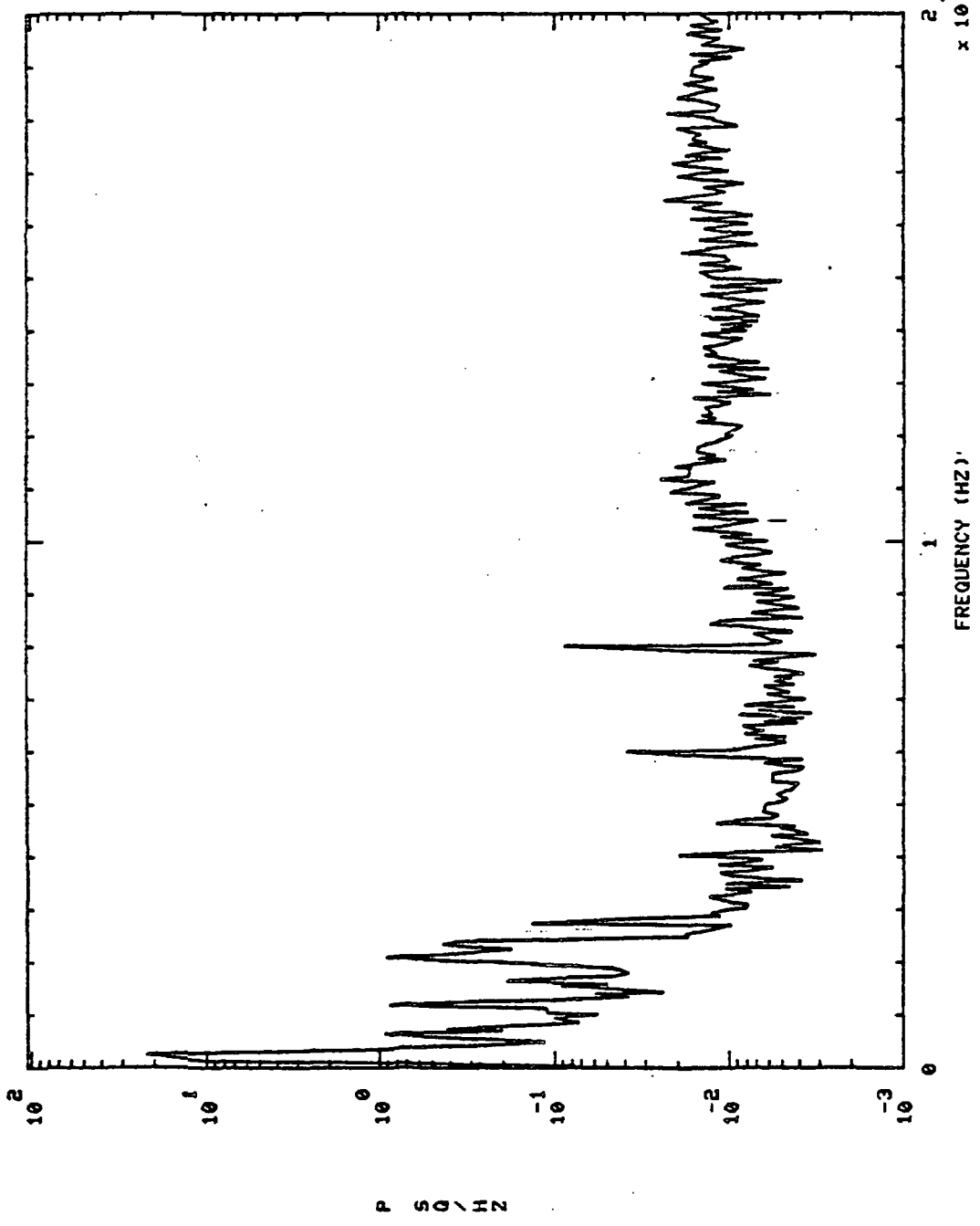
S+ 190.01H0,'5

901322 HPOP DS PR



1

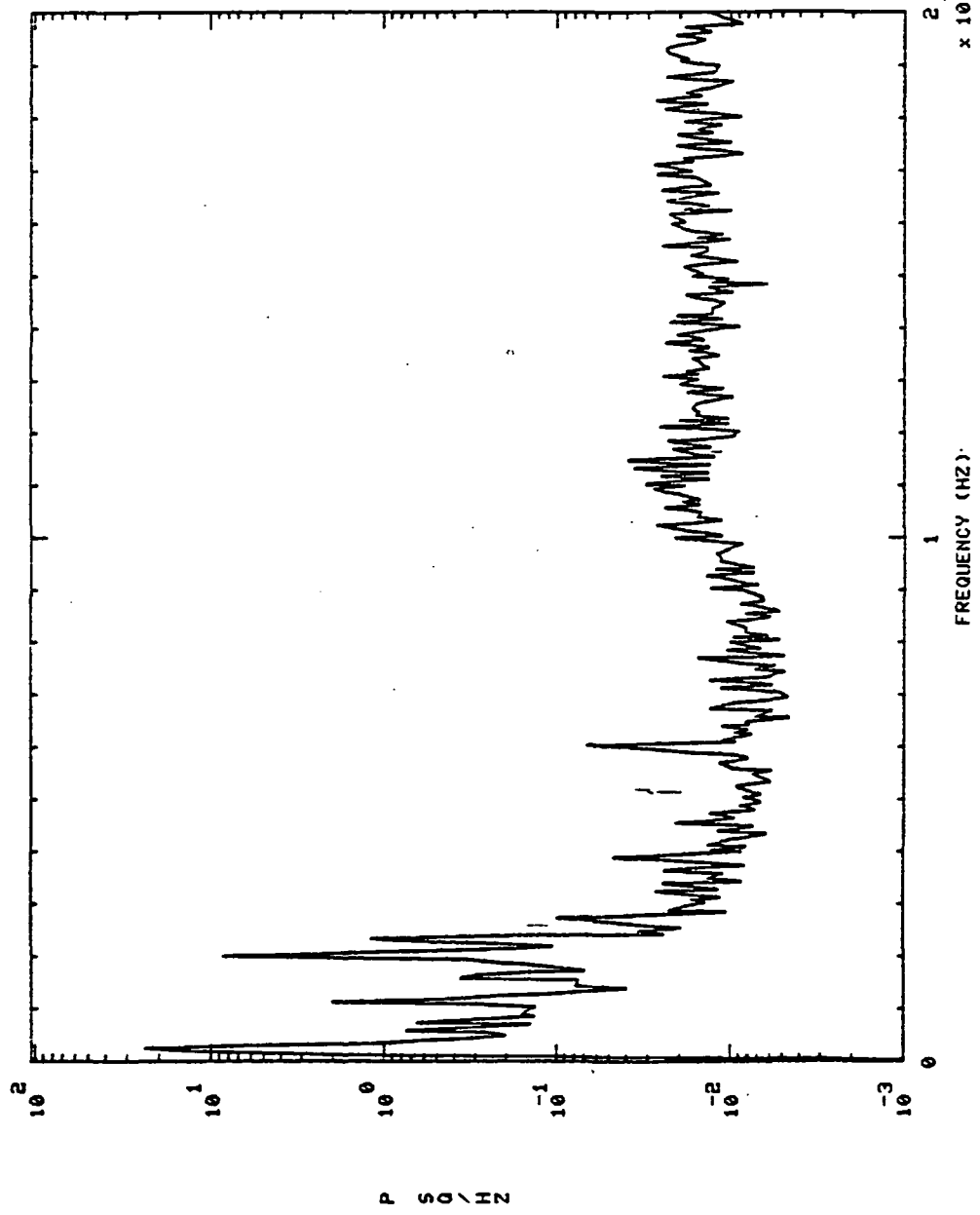
901322 HPOP DS PR S+ 210.01H0,'6



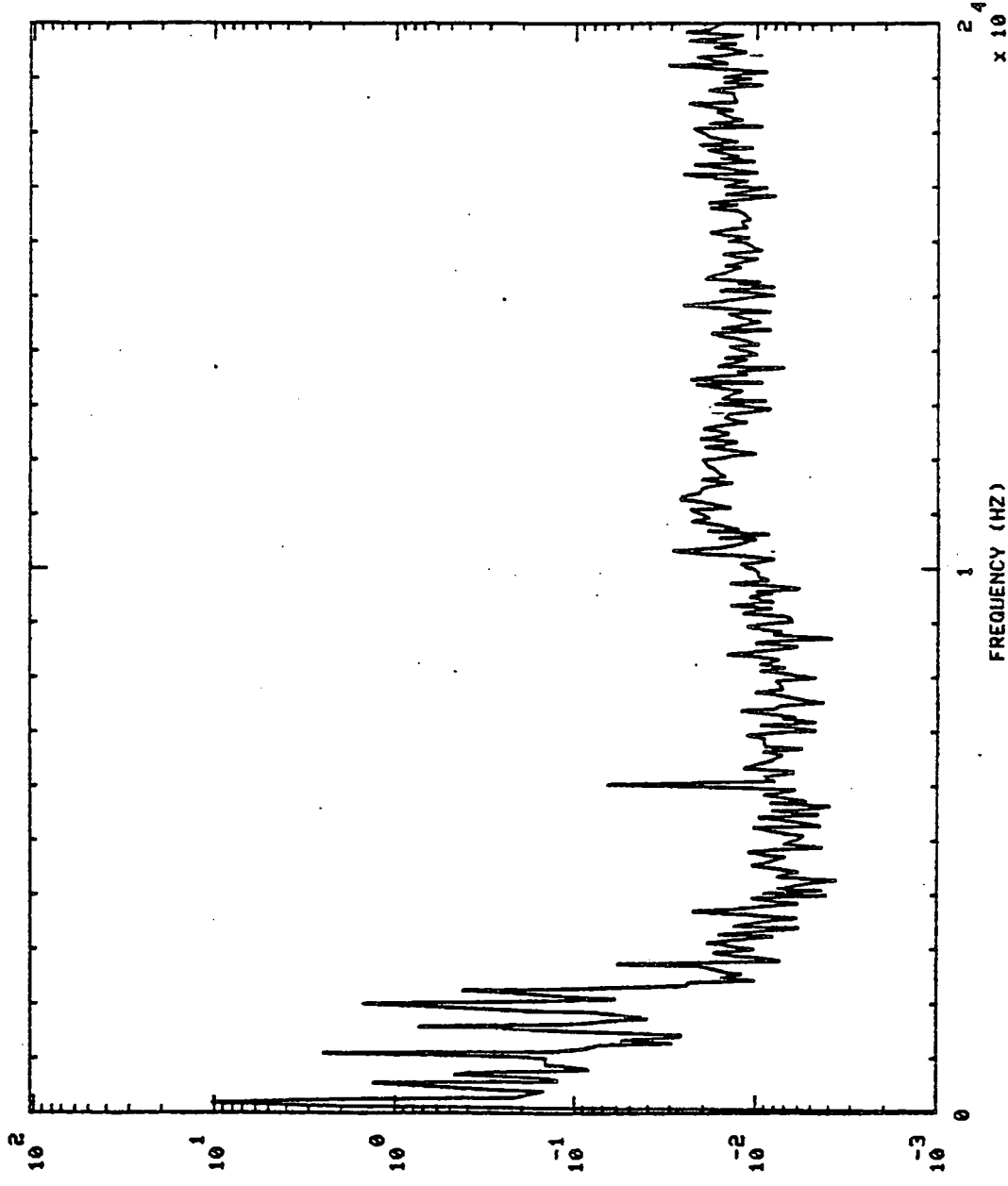
S+ 230.01H0, 'S

HP0P DS PR

901322



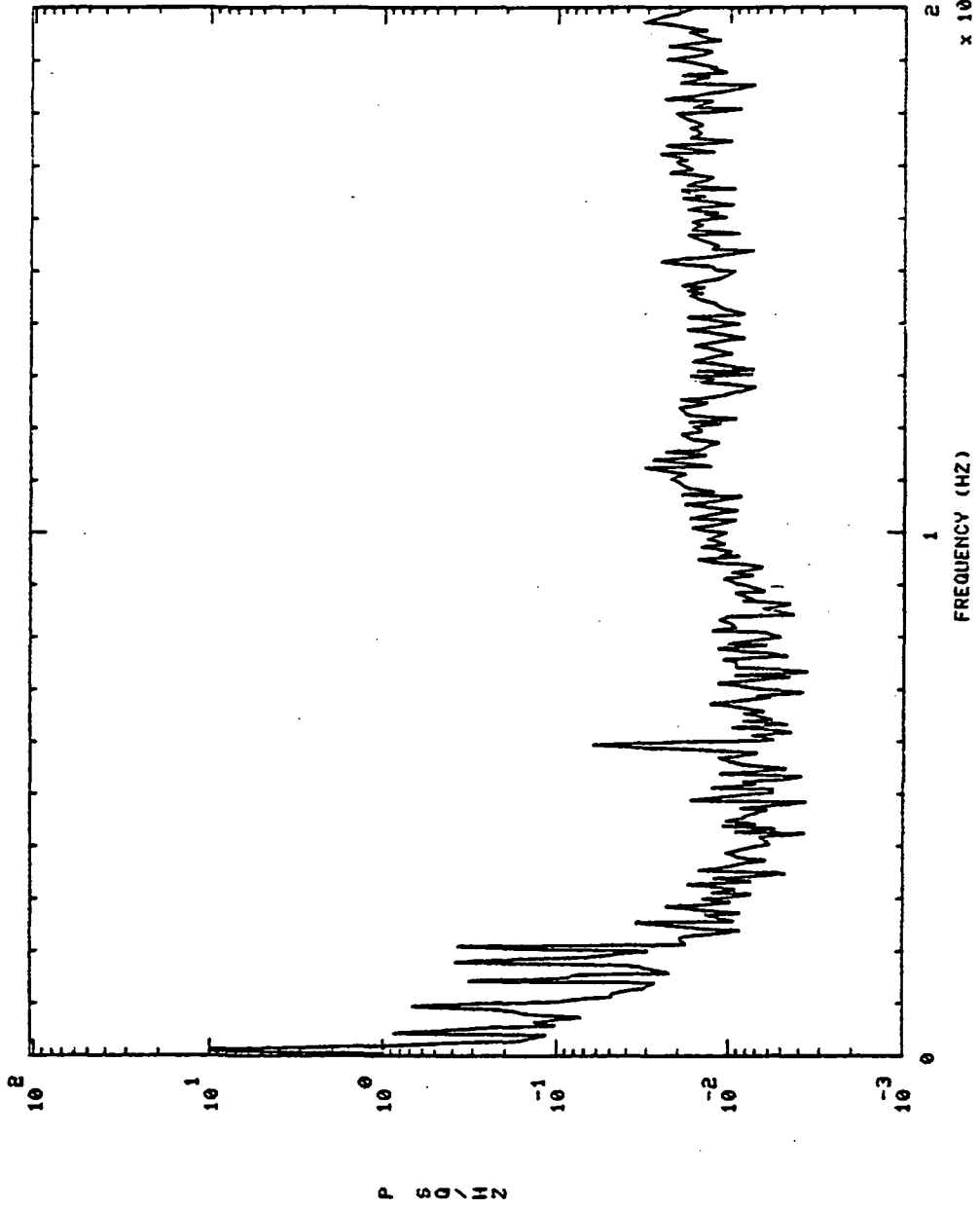
901322 HPOP DS PR S+ 260.01H0. 'S



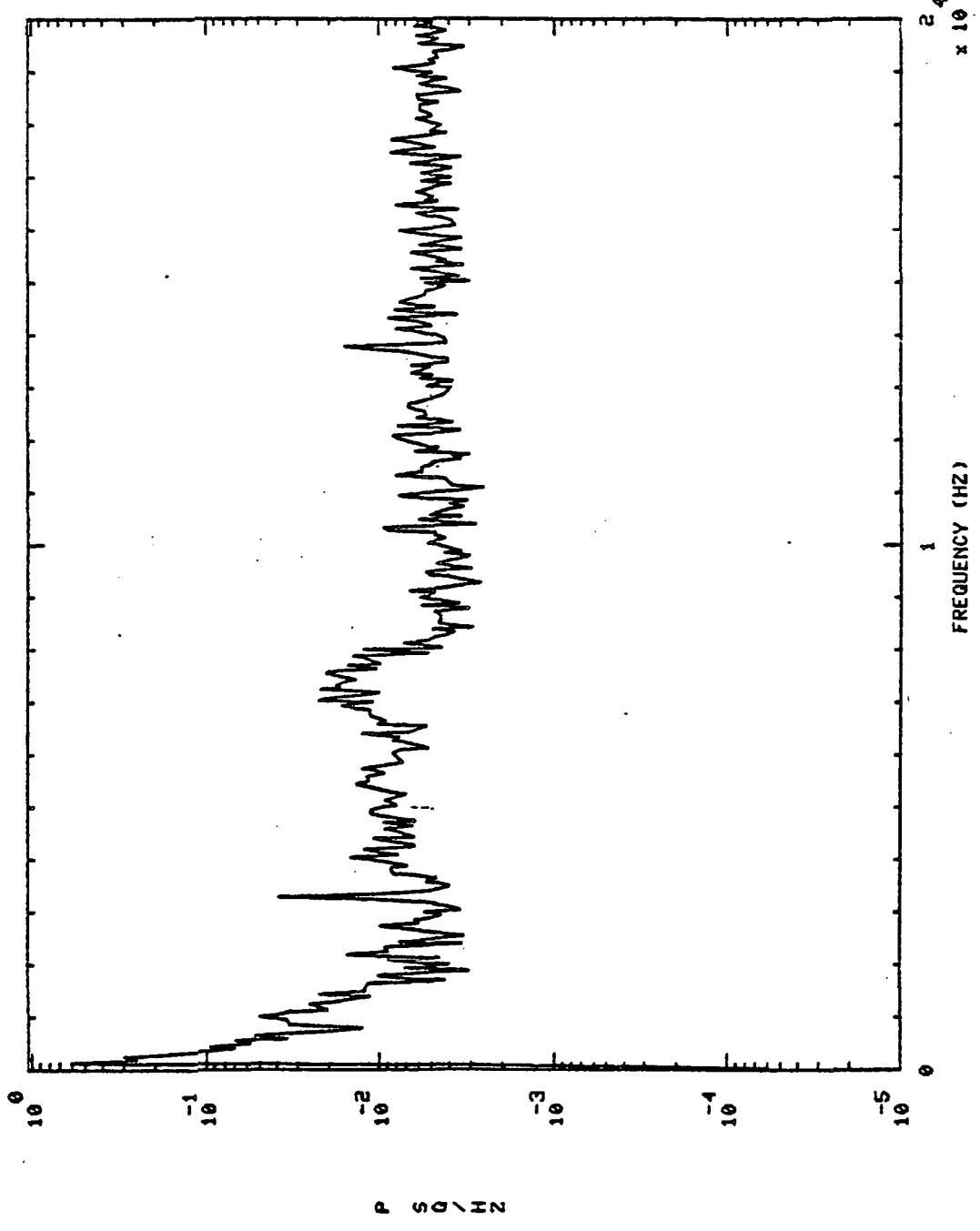
S+ 280.01H0, 'S

HPOP DS PR

901322



901322 MCC HOT GAS IN PR 6+ 6.01H0,'S

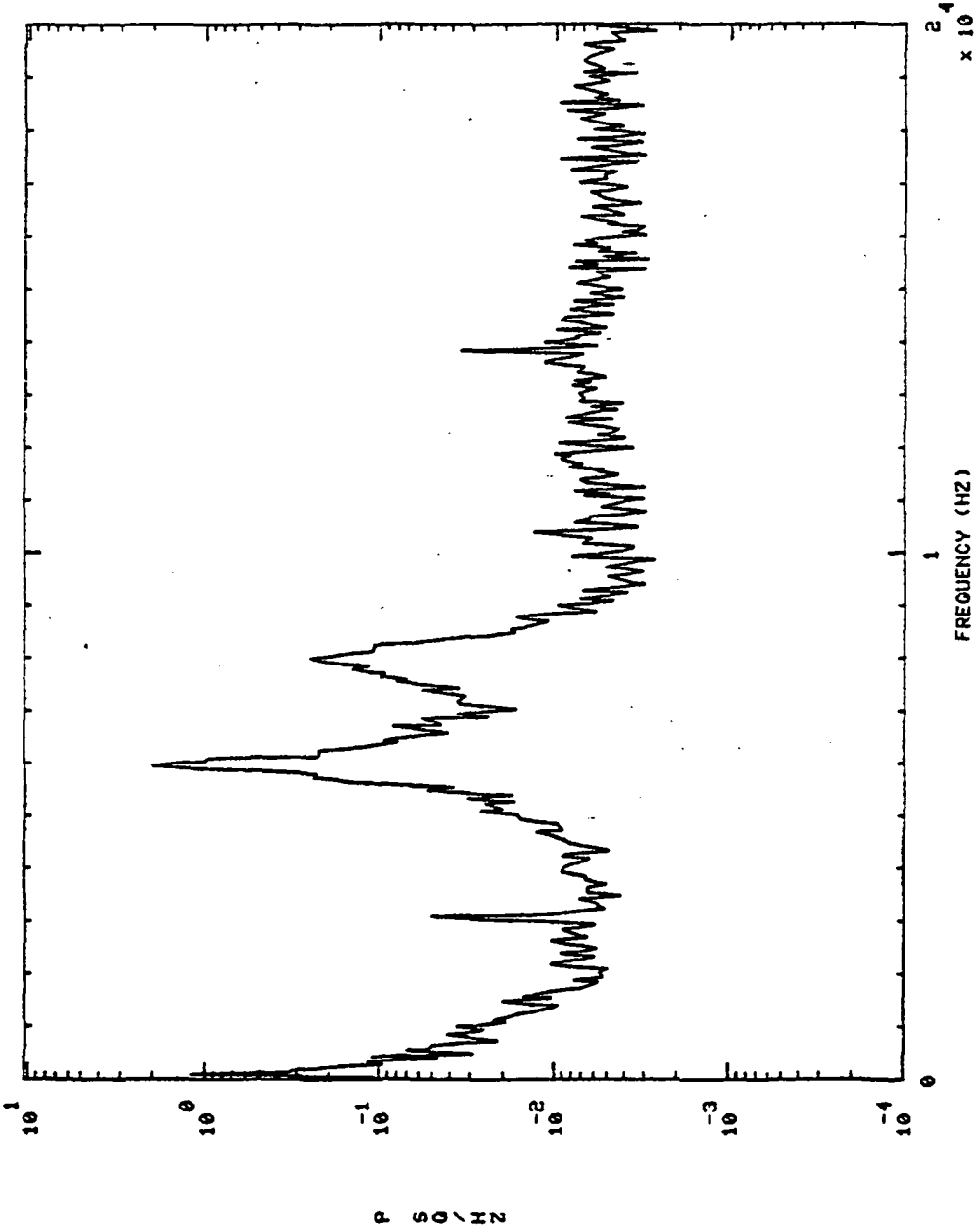




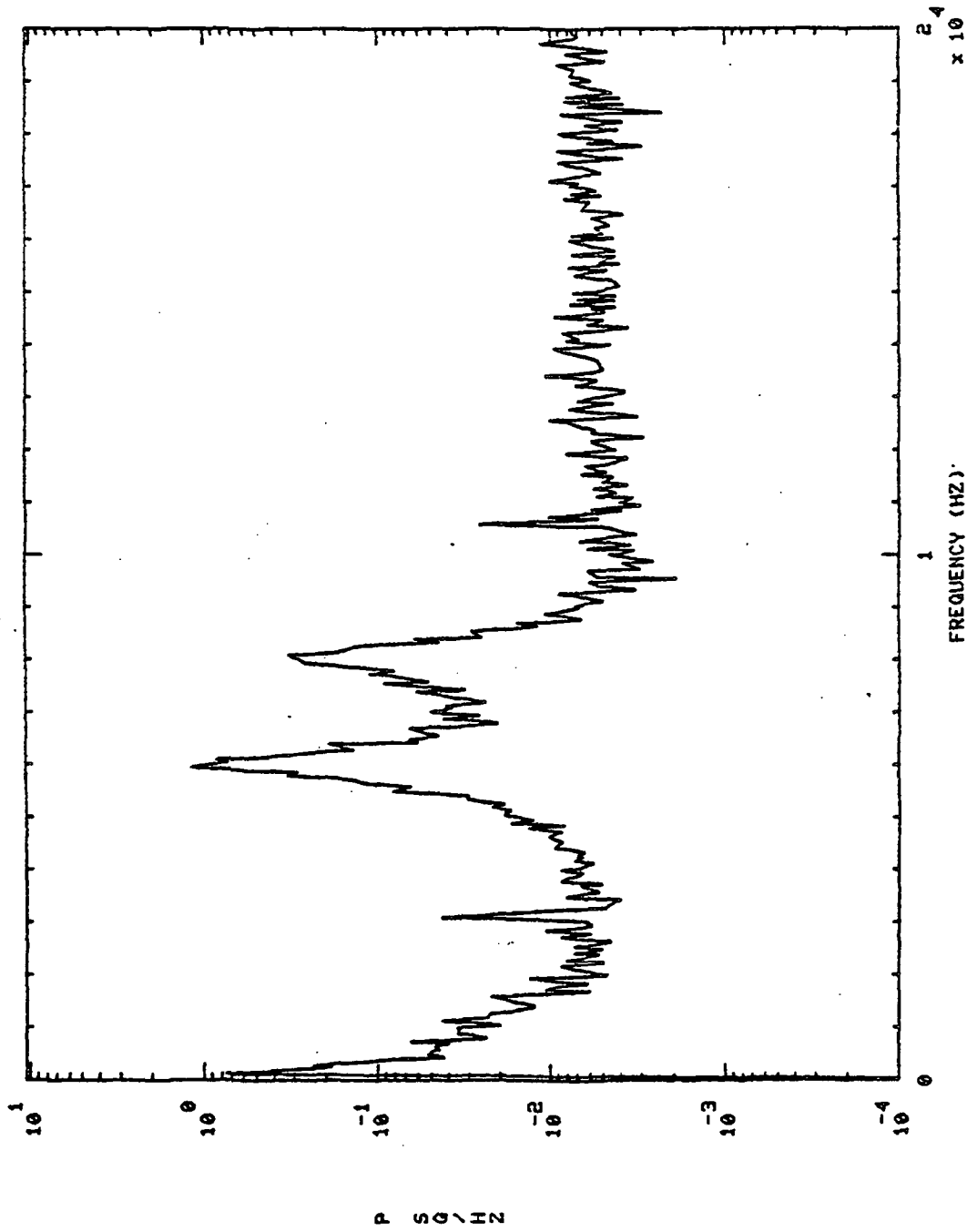
901322 MCC HOT GAS IN PR S+ 130.01H0, 'S

MCC HOT GAS IN PR

901322

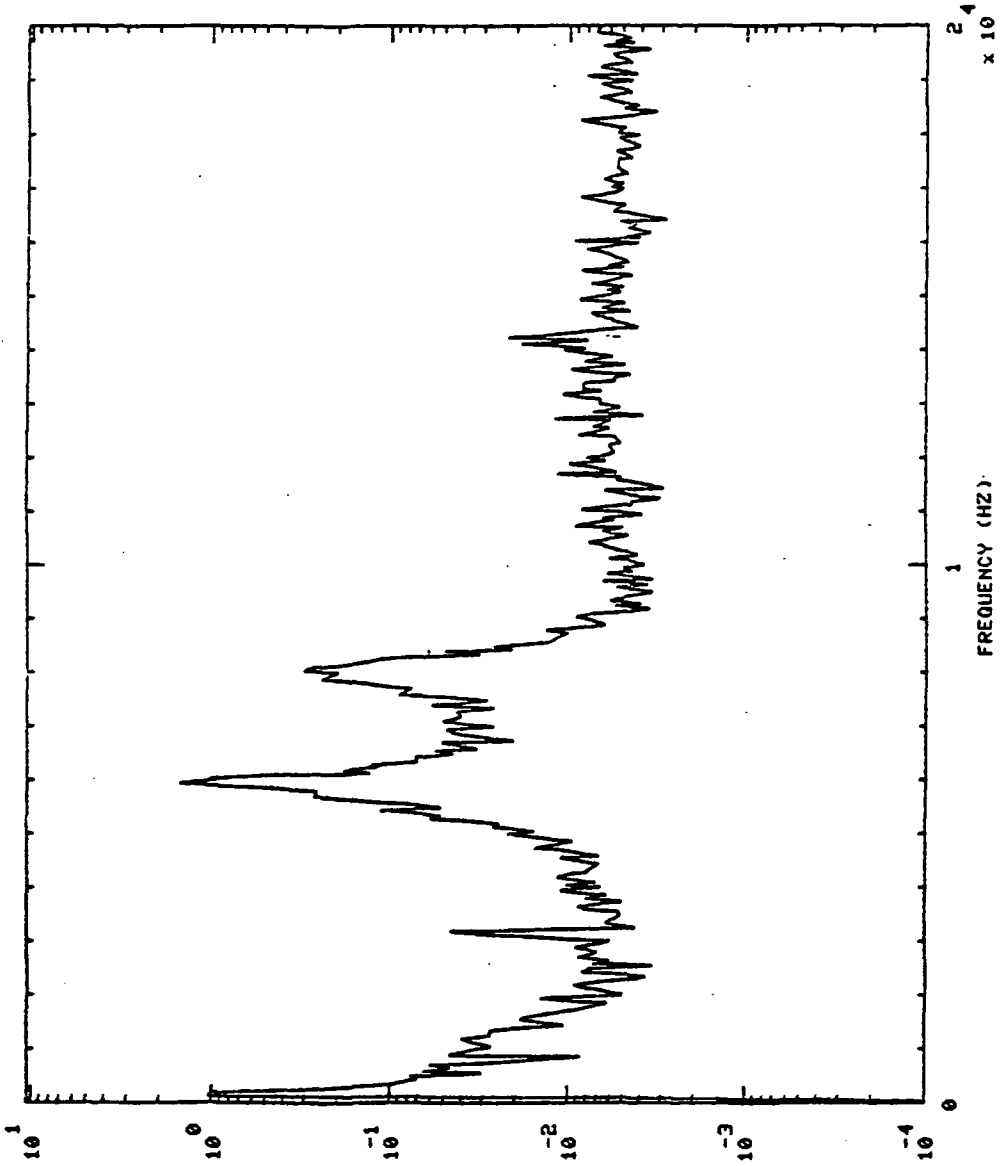


901322 MCC HOT GAS IN PR S+ 150.01H0.'S



S+ 170.01H0,'S

901322 MCC HOT GAS IN PR

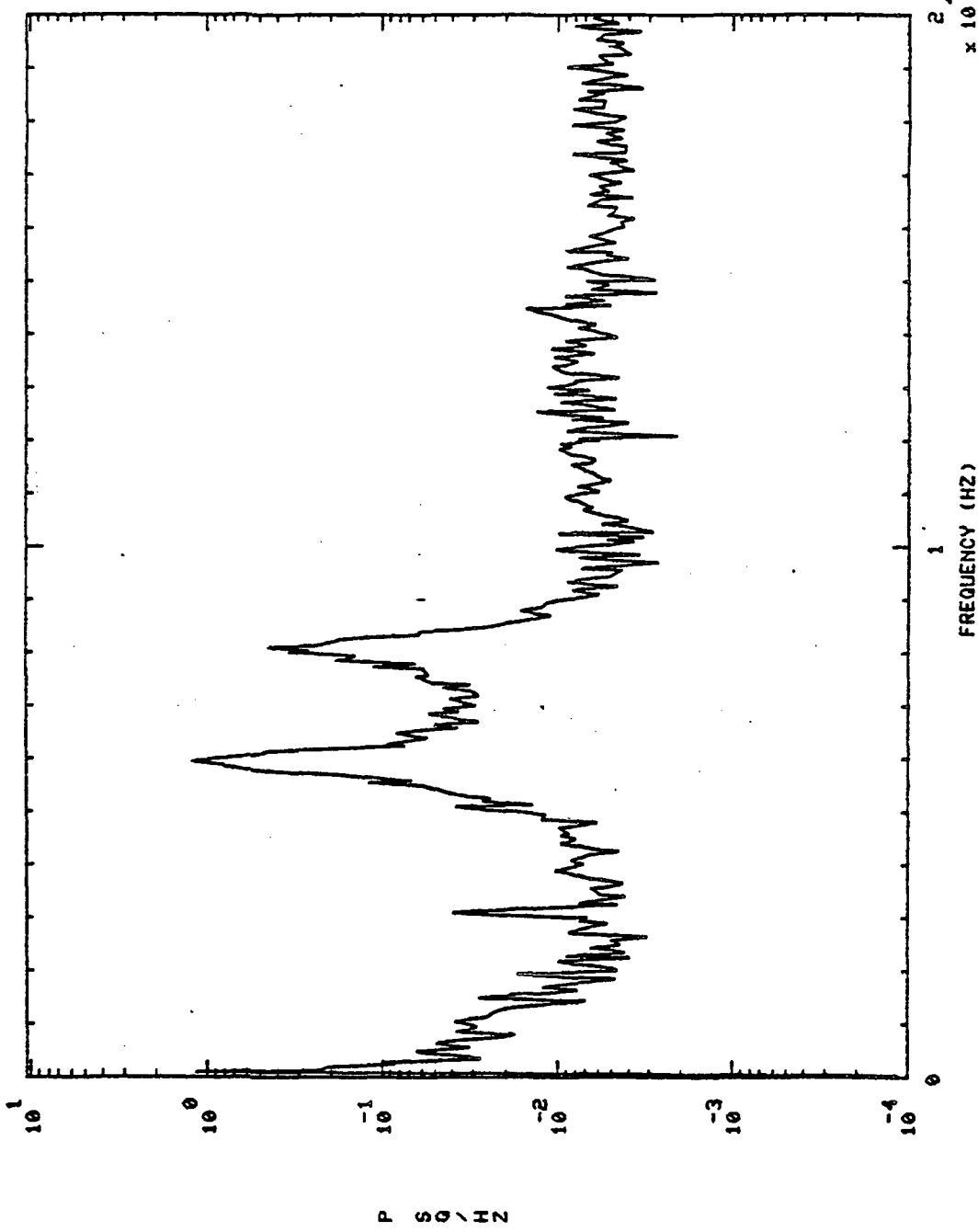


P S D / H Z

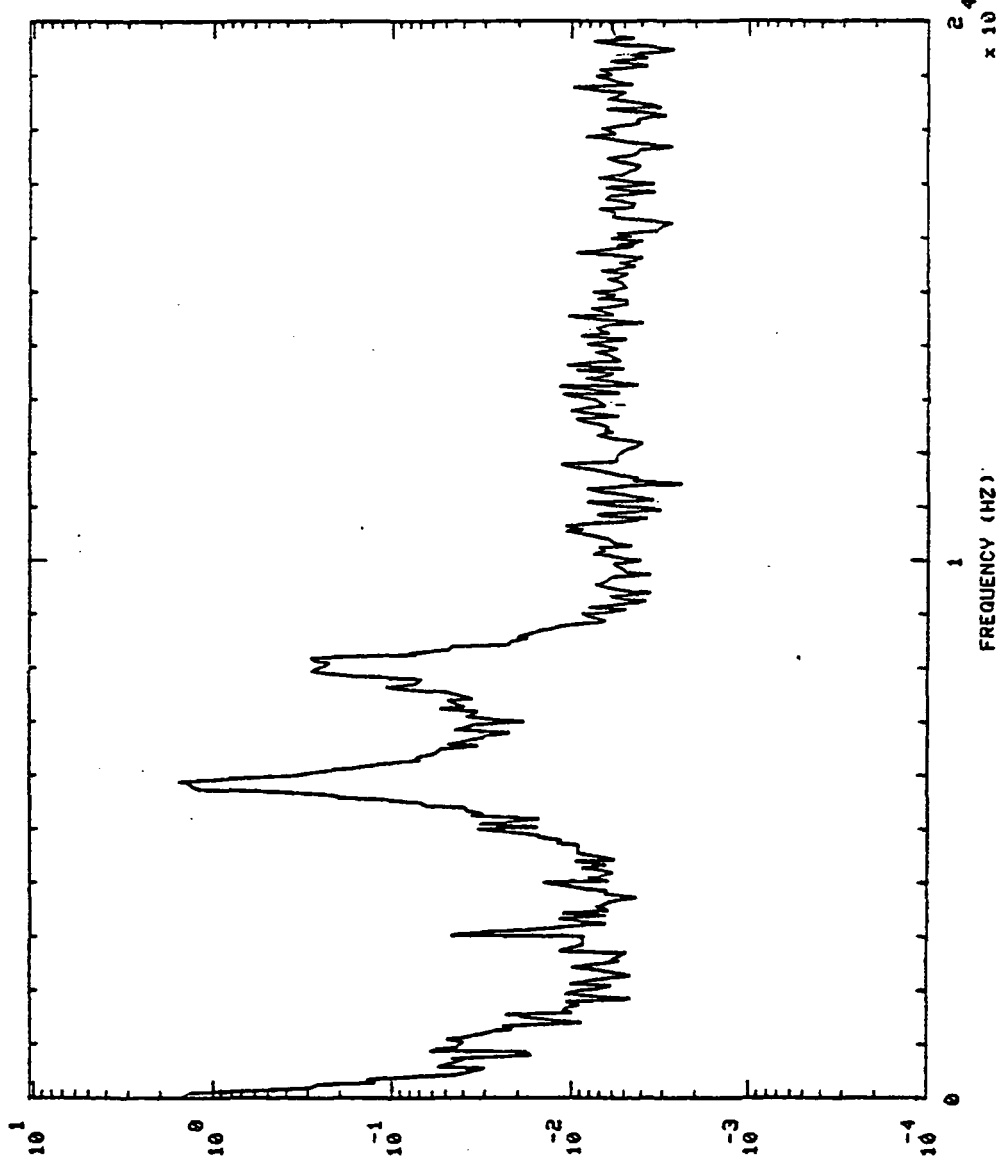
FREQUENCY (HZ)

01 02

901322 MCC HOT GAS IN PR S+ 190.01H0,'S



901322 MCC HOT GAS IN PR S+ 210.01H0,'S

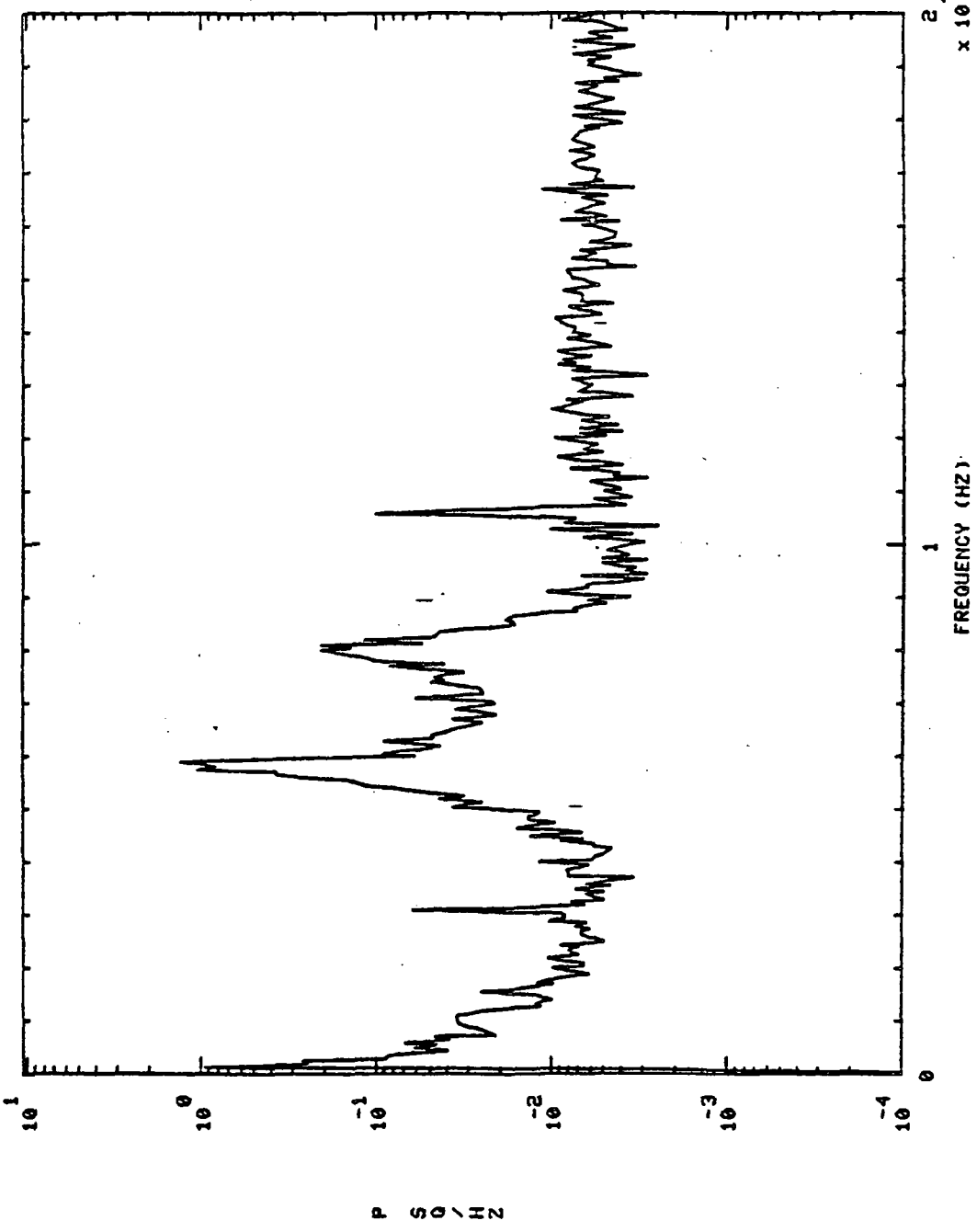


P S D / H Z

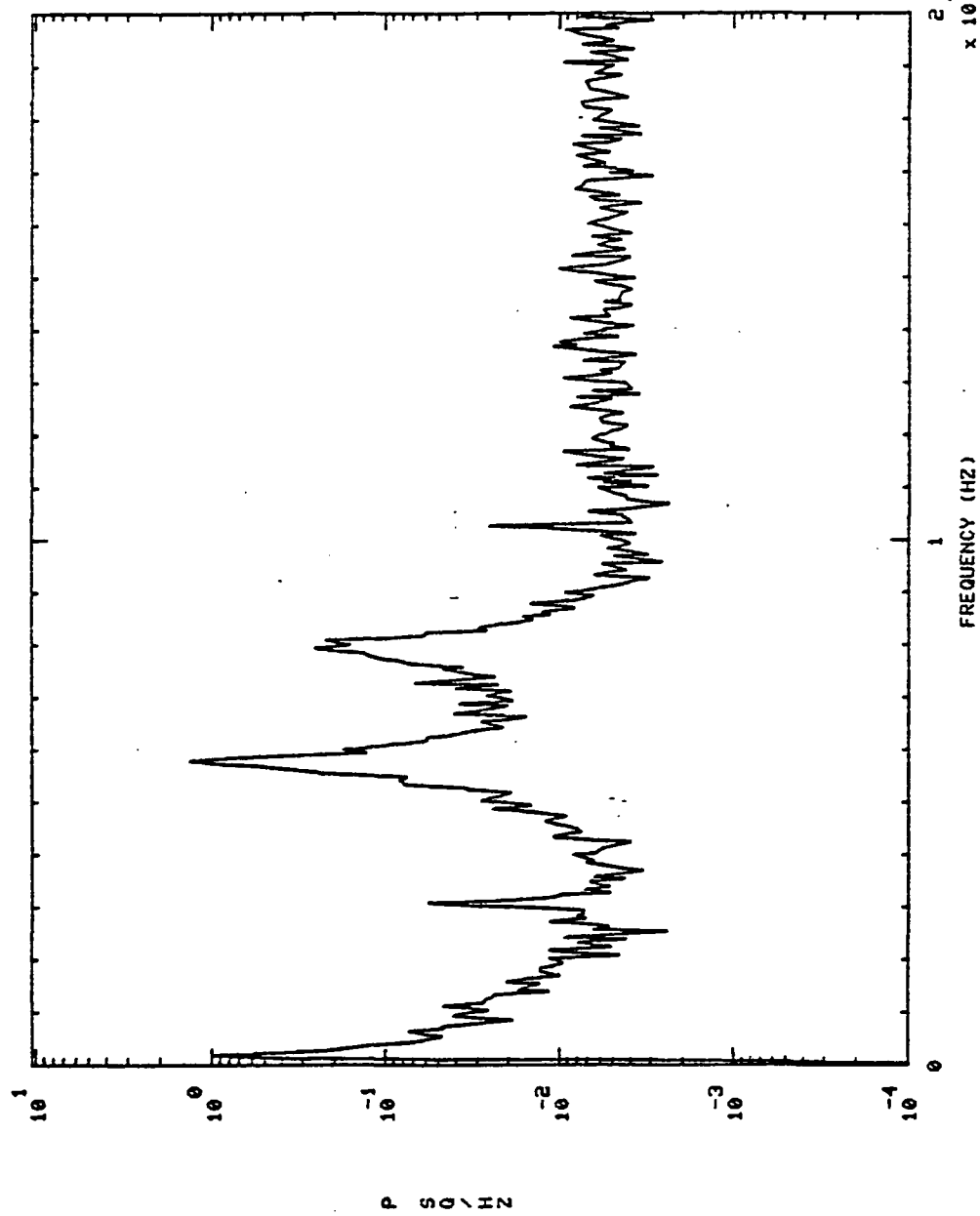
FREQUENCY (HZ) x 10<sup>4</sup>

901322 MCC HOT GAS IN PR

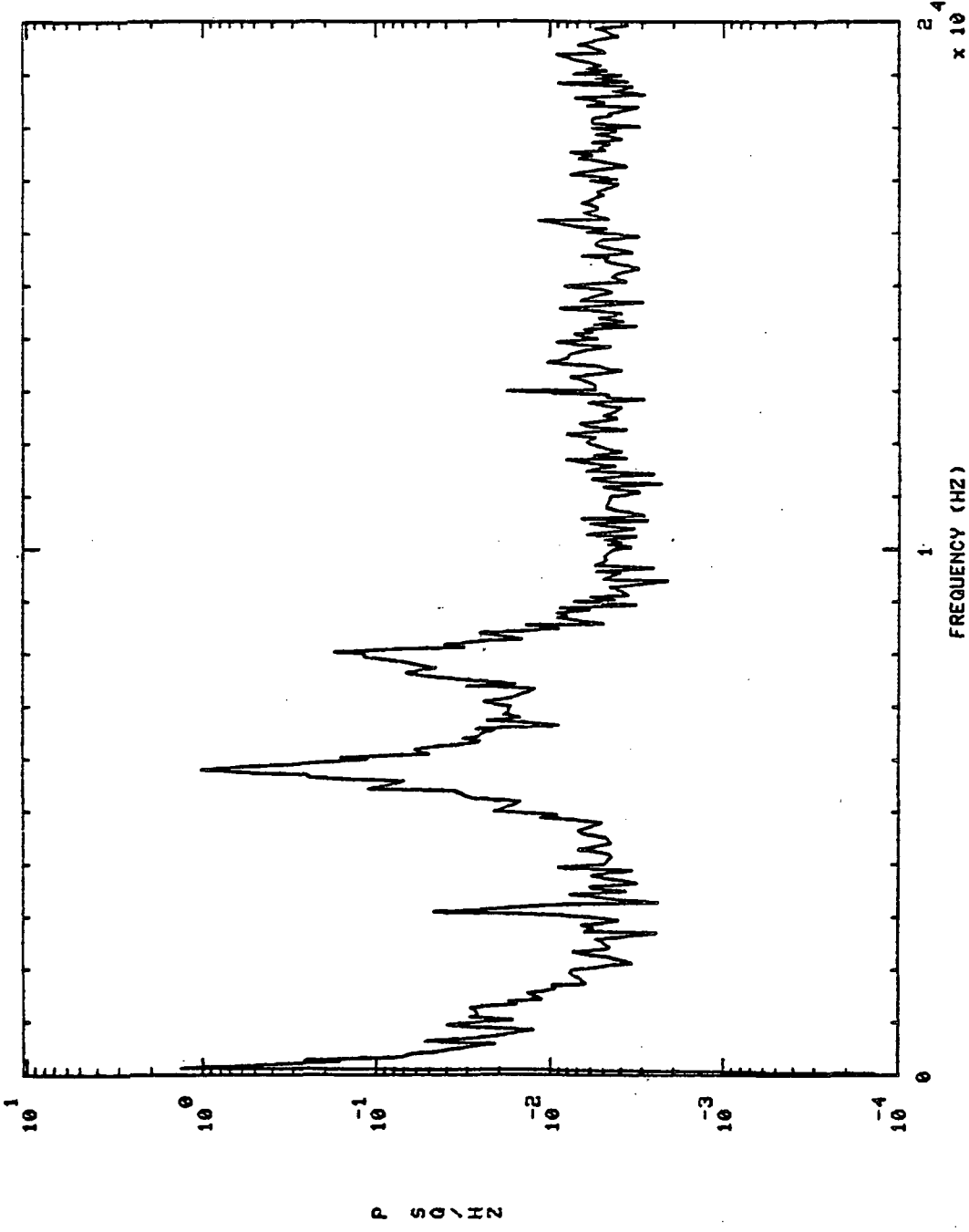
S+ 230.01H0, 'S



901322 MCC HOT GAS IN PR S+ 250.01H0,'S

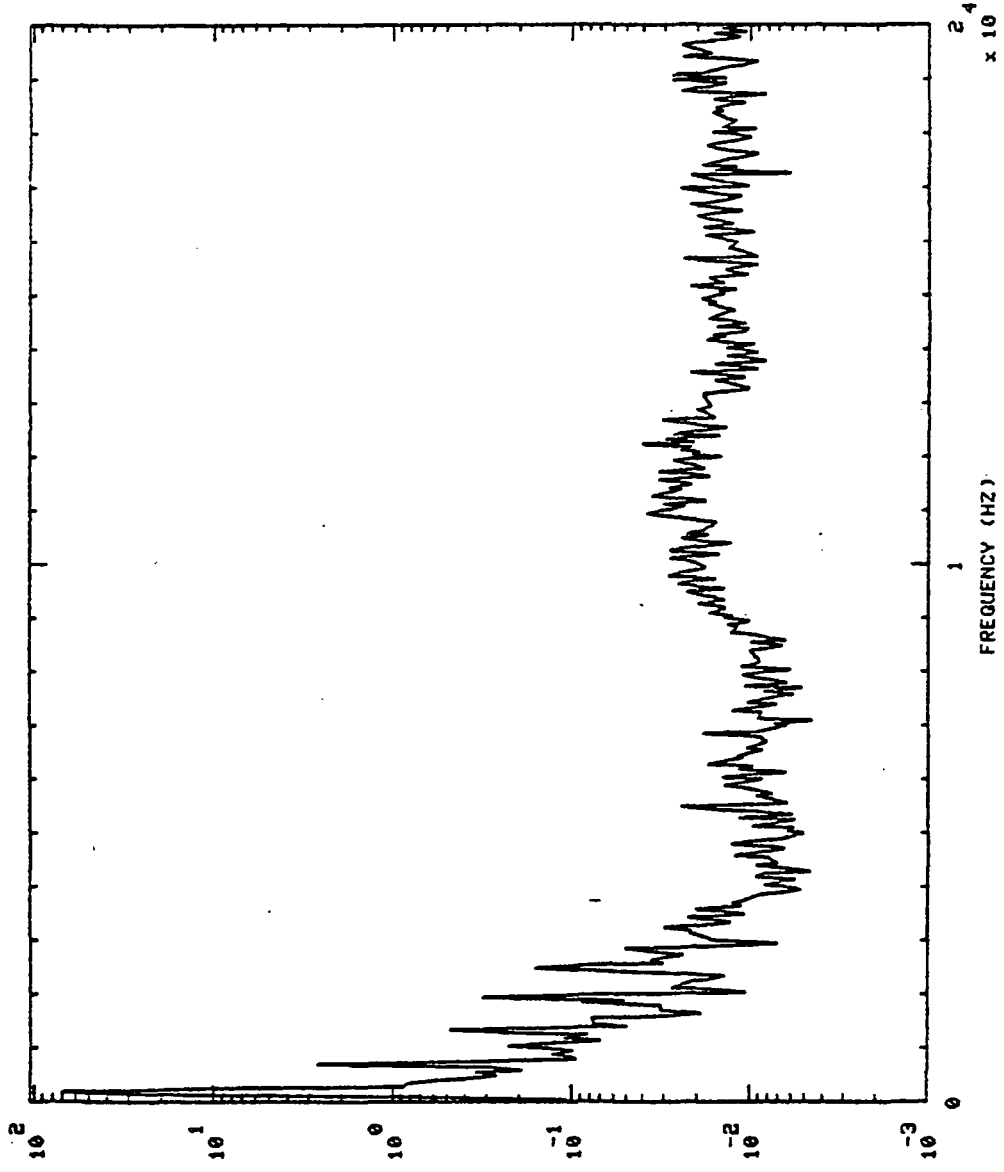


901322 MCC HOT GAS IN PR S+ 230.01H0.'S





901322 P8P D5 PR S+ 6.01H0,'S

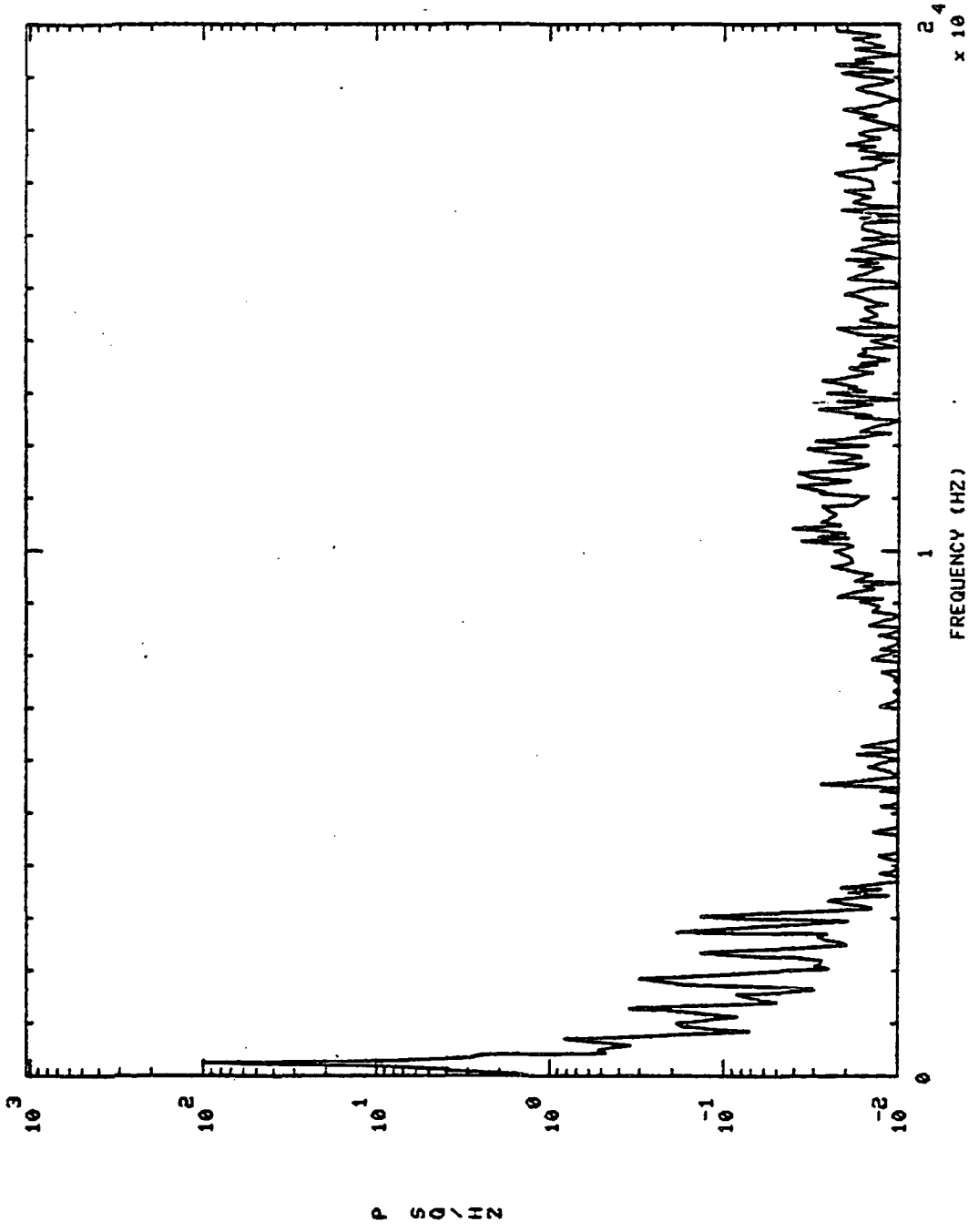


PSD / HZ

FREQUENCY (HZ)  $\times 10^2$

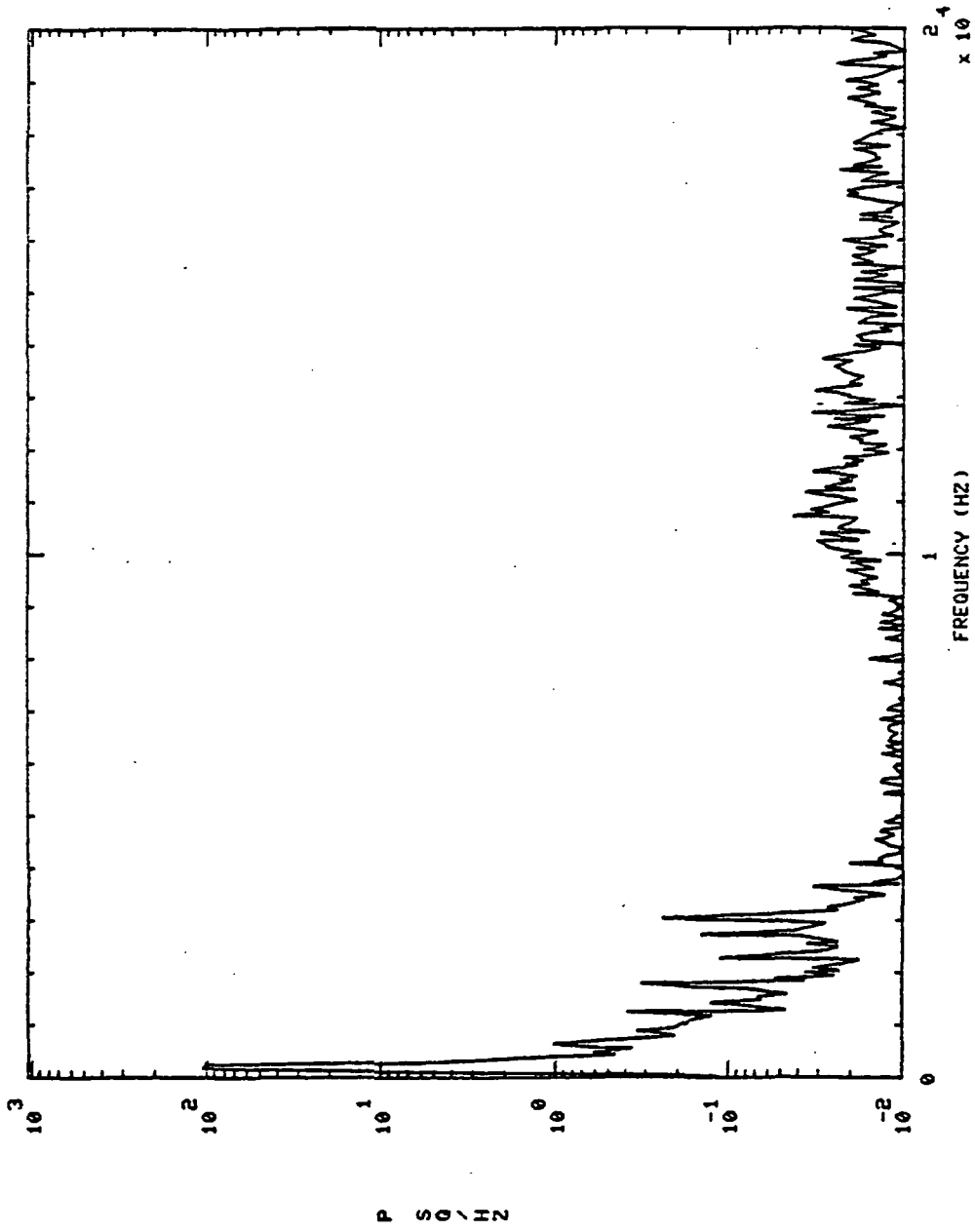
S+ 130.01H0,'S

901322 PBP DS PR



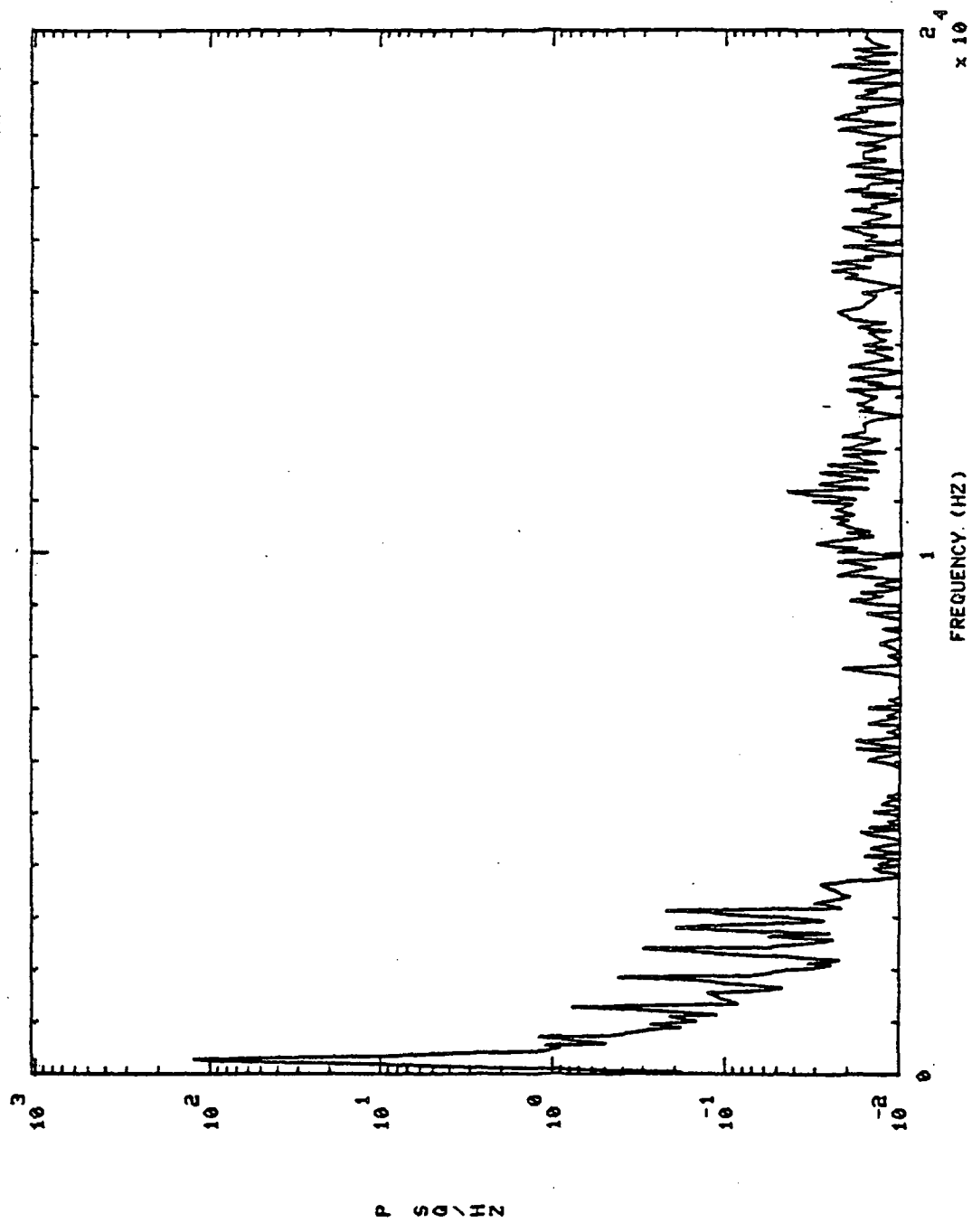
S+ 150.01H0,'S

901322 PBP DS PR

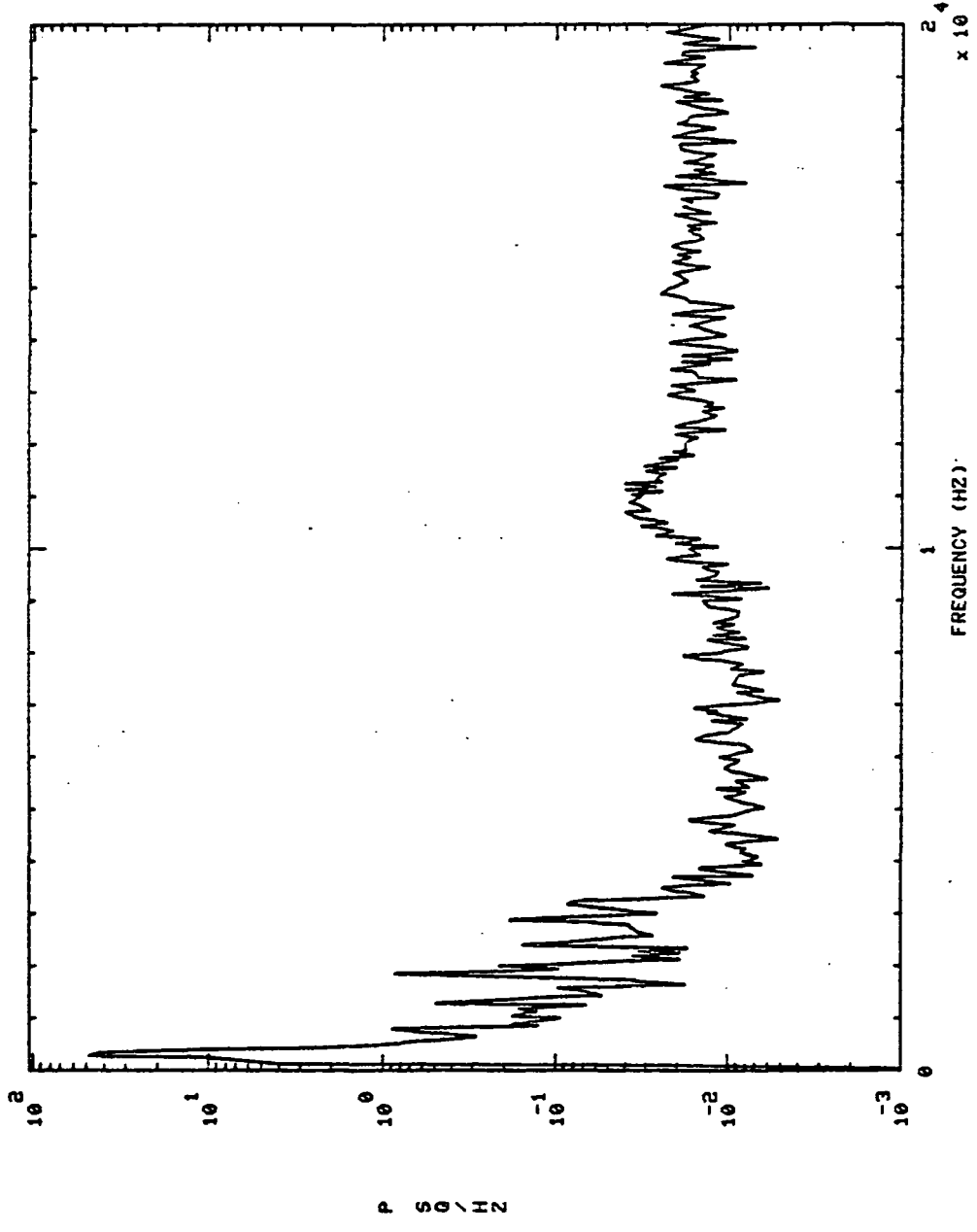


S+ 170.01H0, 'S

901322 PBP DS PR



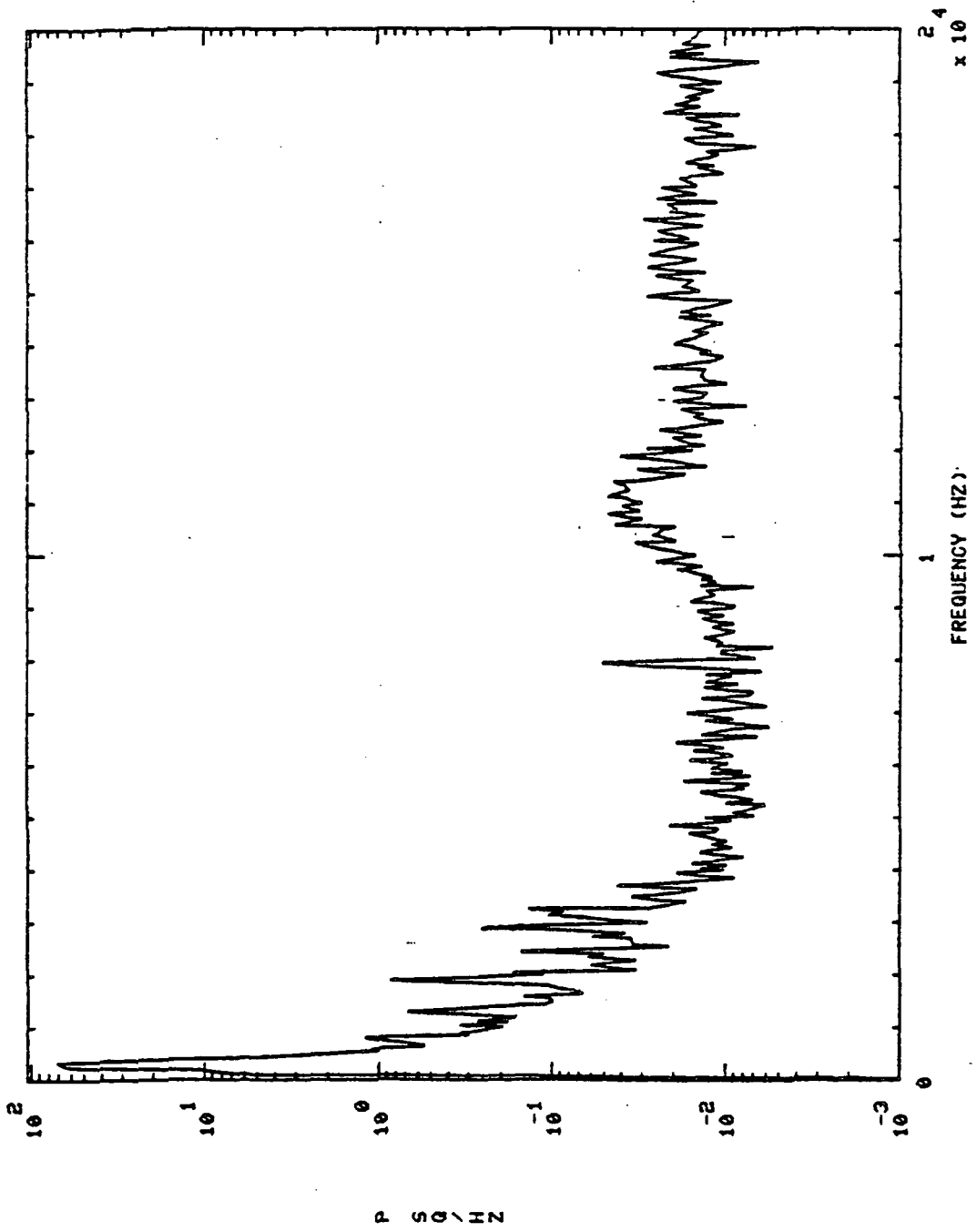
901322 P8P D5 PR S+ 190.01H0, 'S.



S+ 210.01H0, 'S

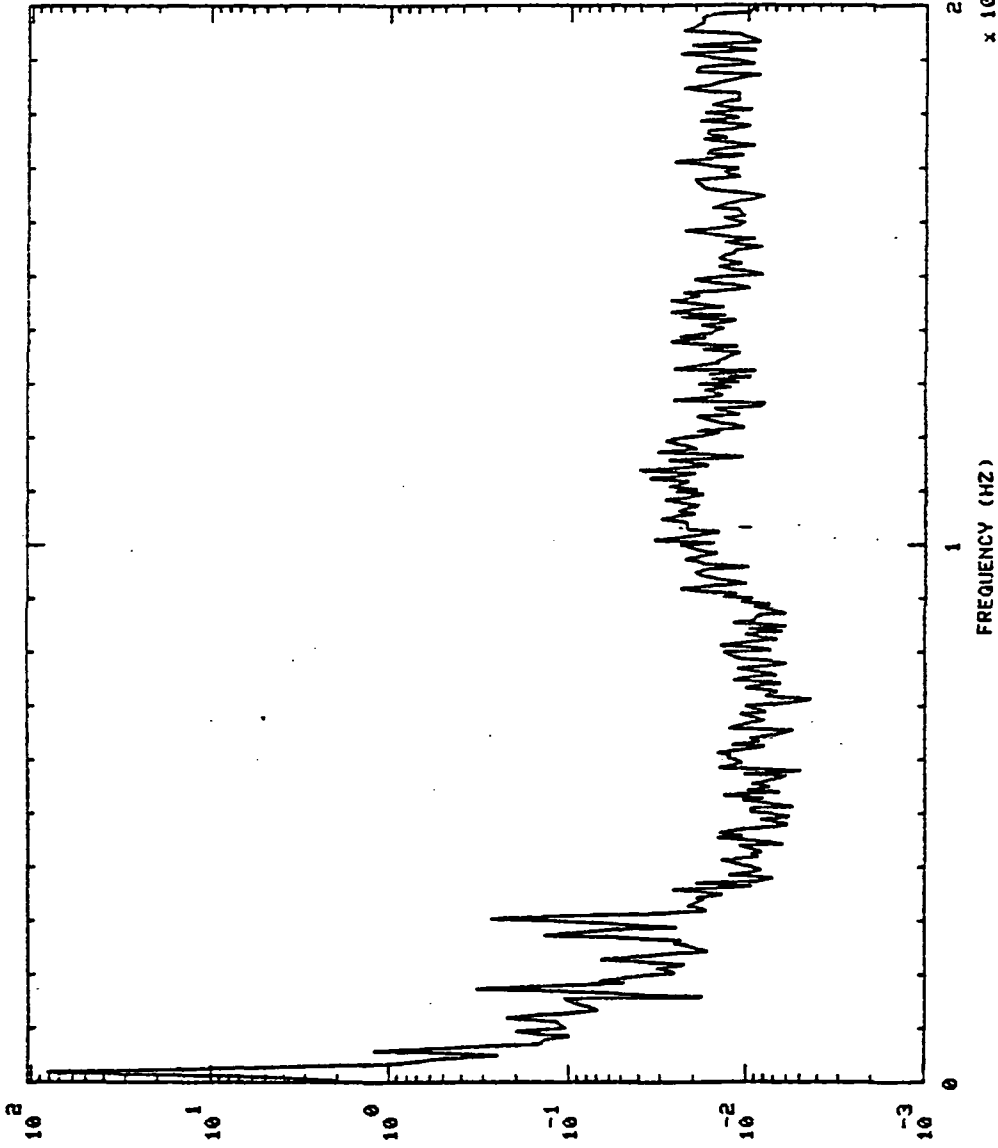
PBP DS PR

901322



901322 PBP DS PR S+ 230.01H0,'S

901322 PBP DS PR



P S Q \ H Z

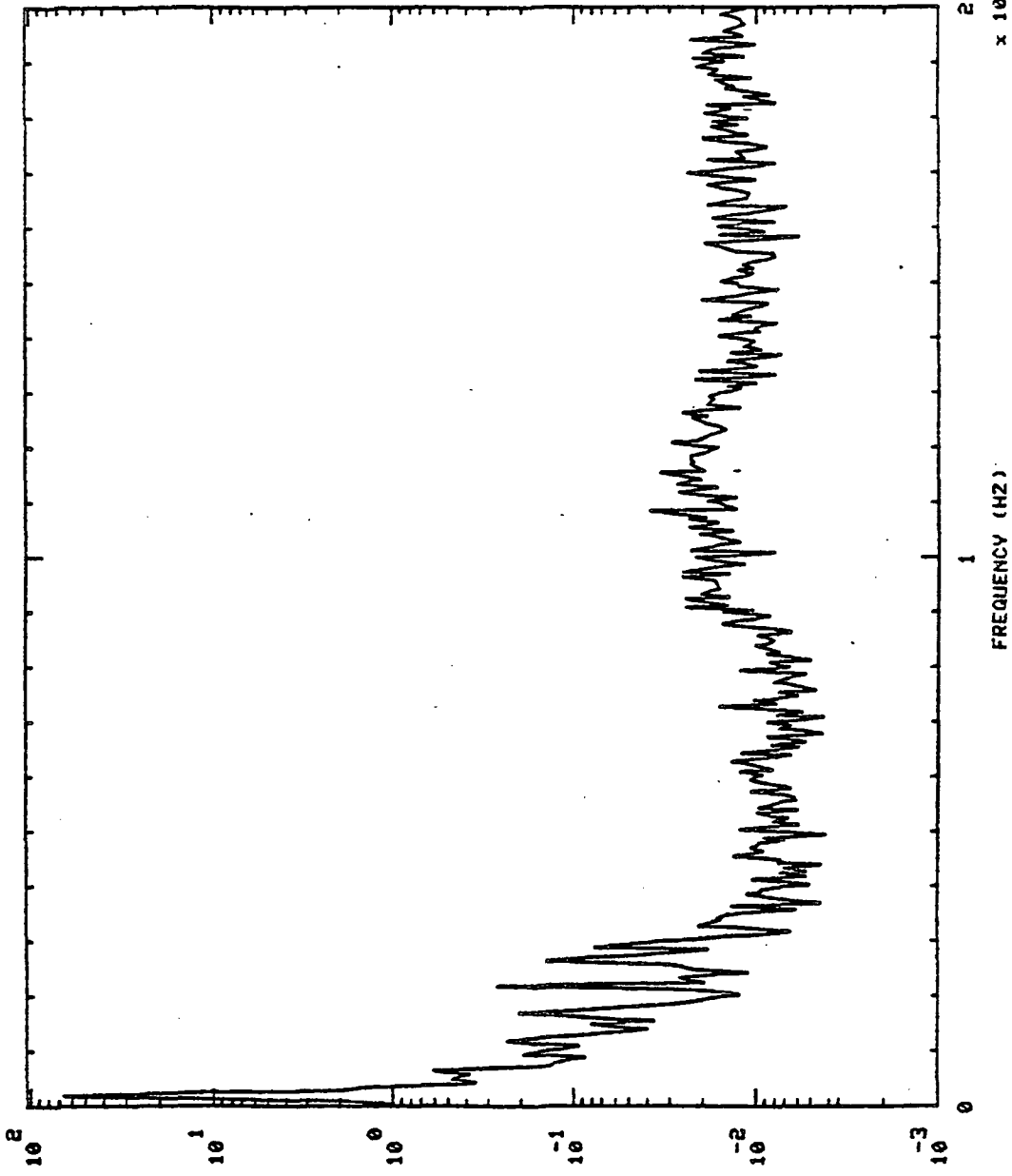
FREQUENCY (HZ)

x 10<sup>4</sup>

S+ 264.01H0, 'S

PBP DS PR

901322



P SQ / HZ

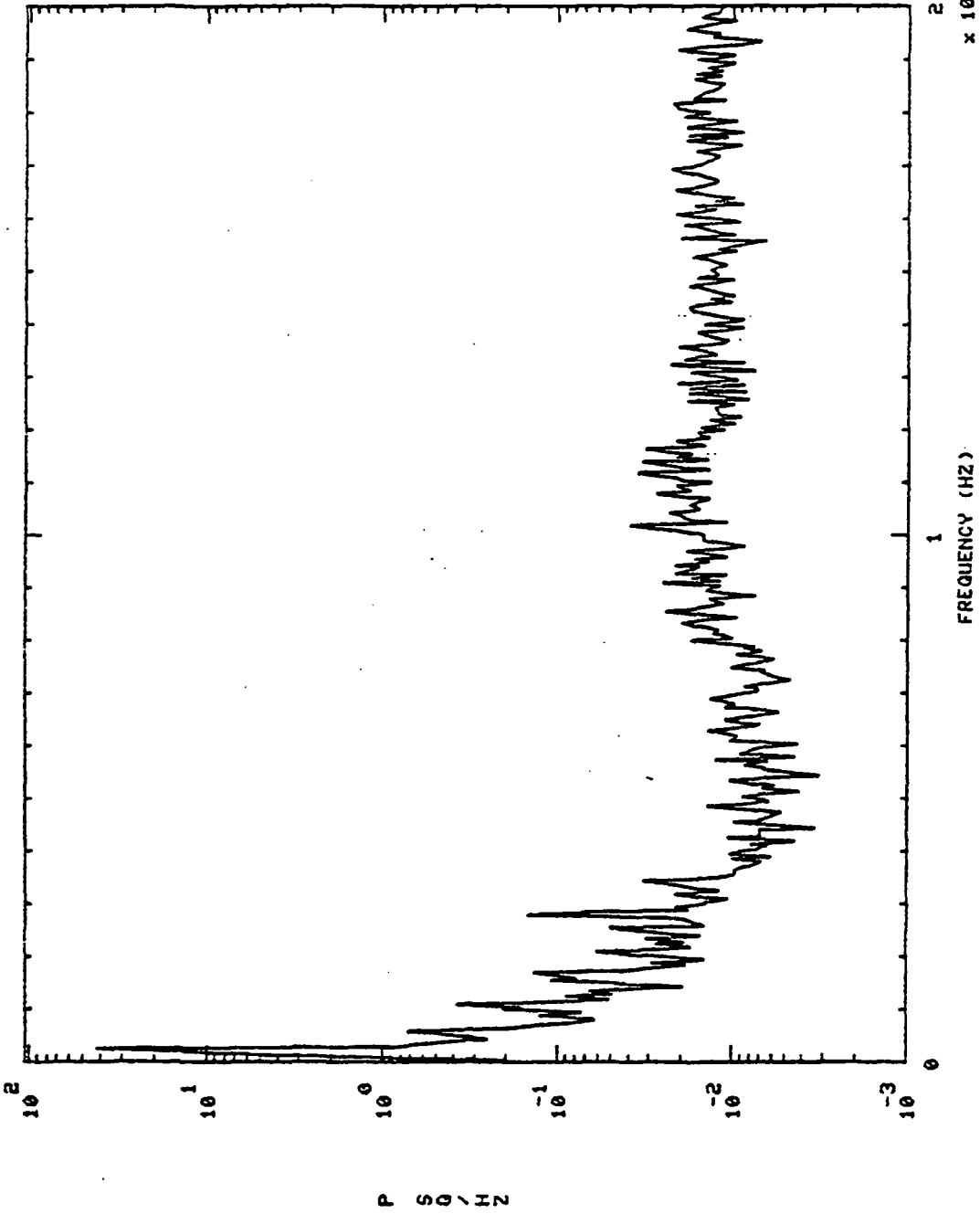
FREQUENCY (HZ)

x 10<sup>4</sup>

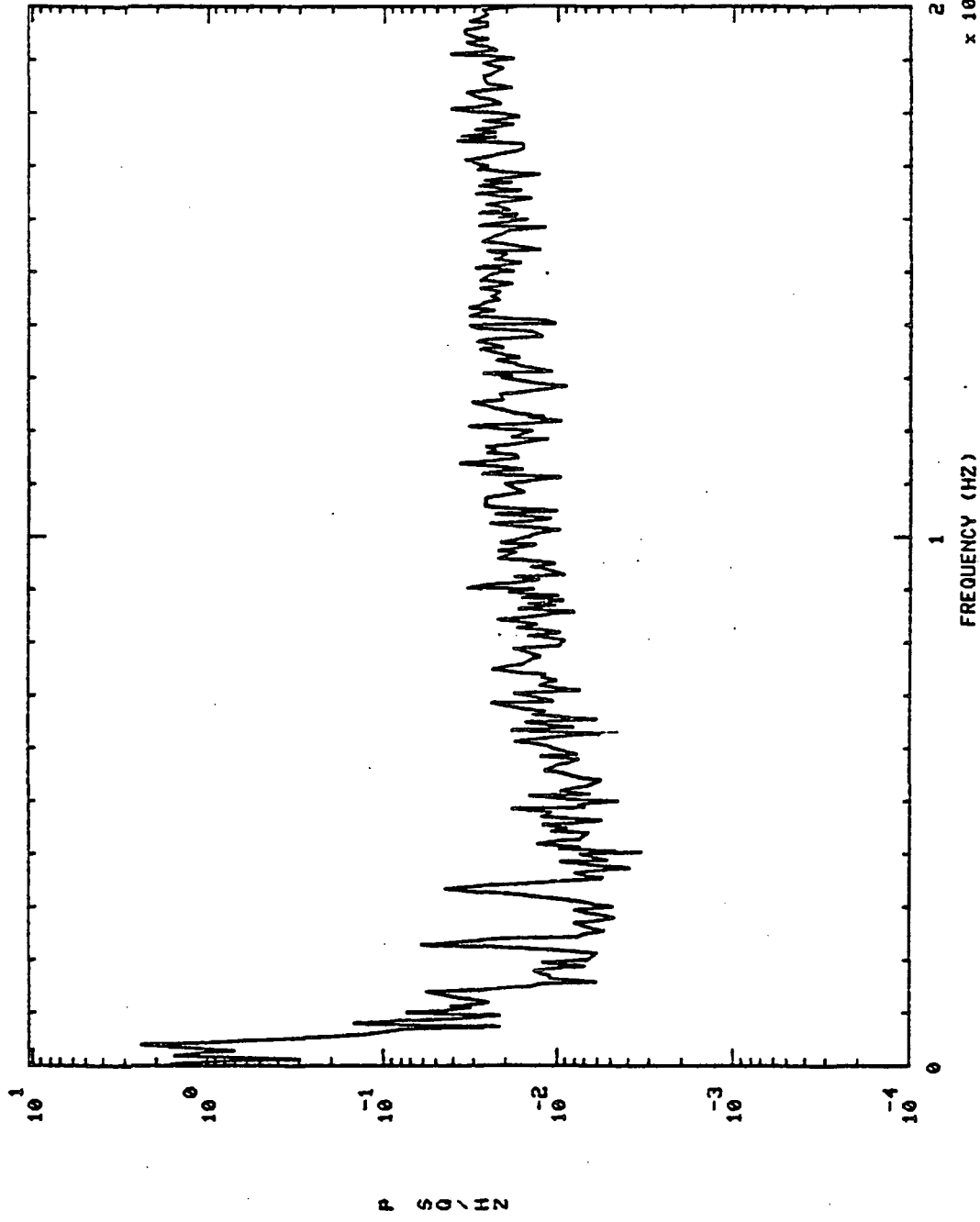


St 284.01H0, 'S

901322 PBP DS PR

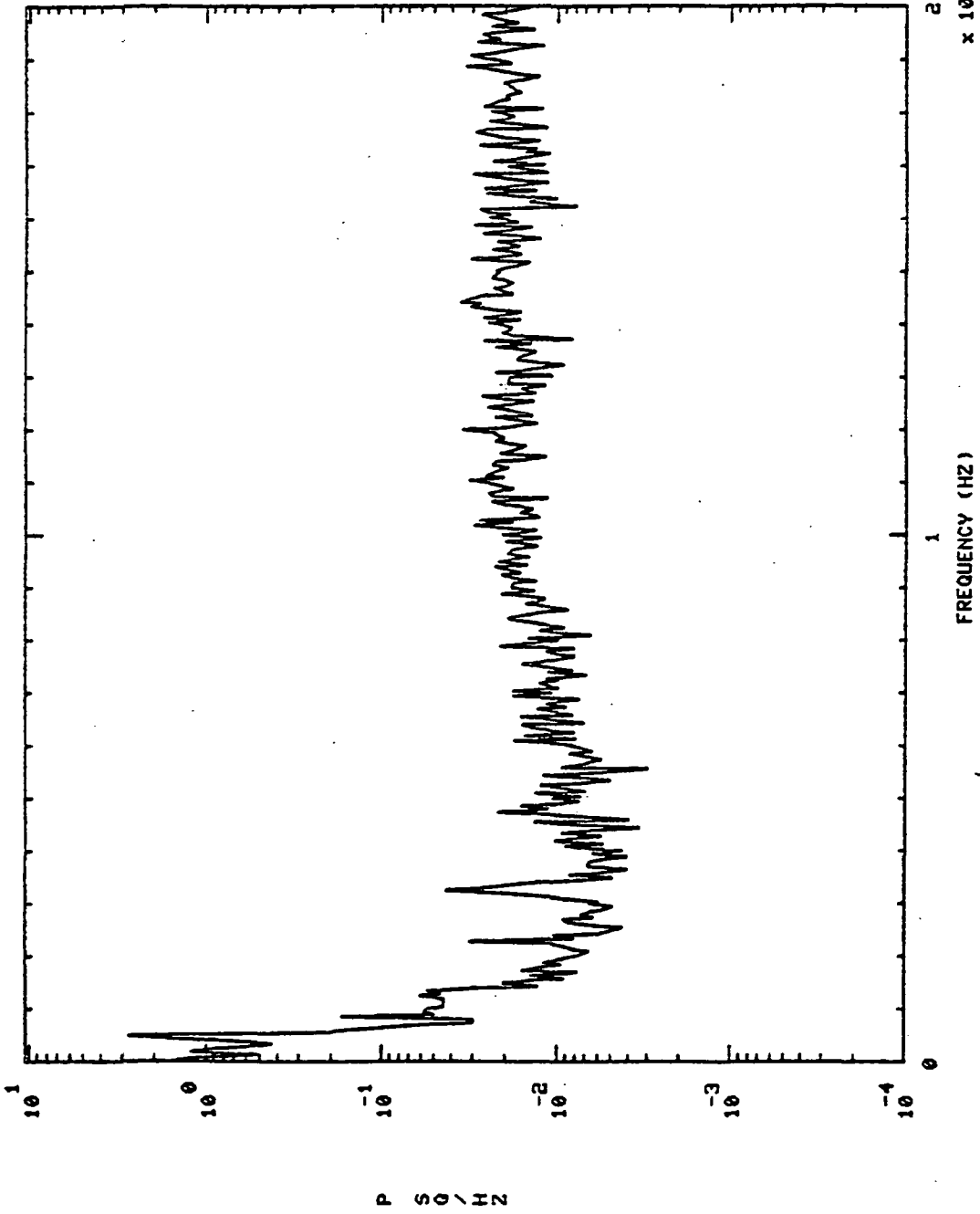


901322 FPB PC S+ 6.01H0,'S



S+ 130.01H0,'S

901322 FPB PC

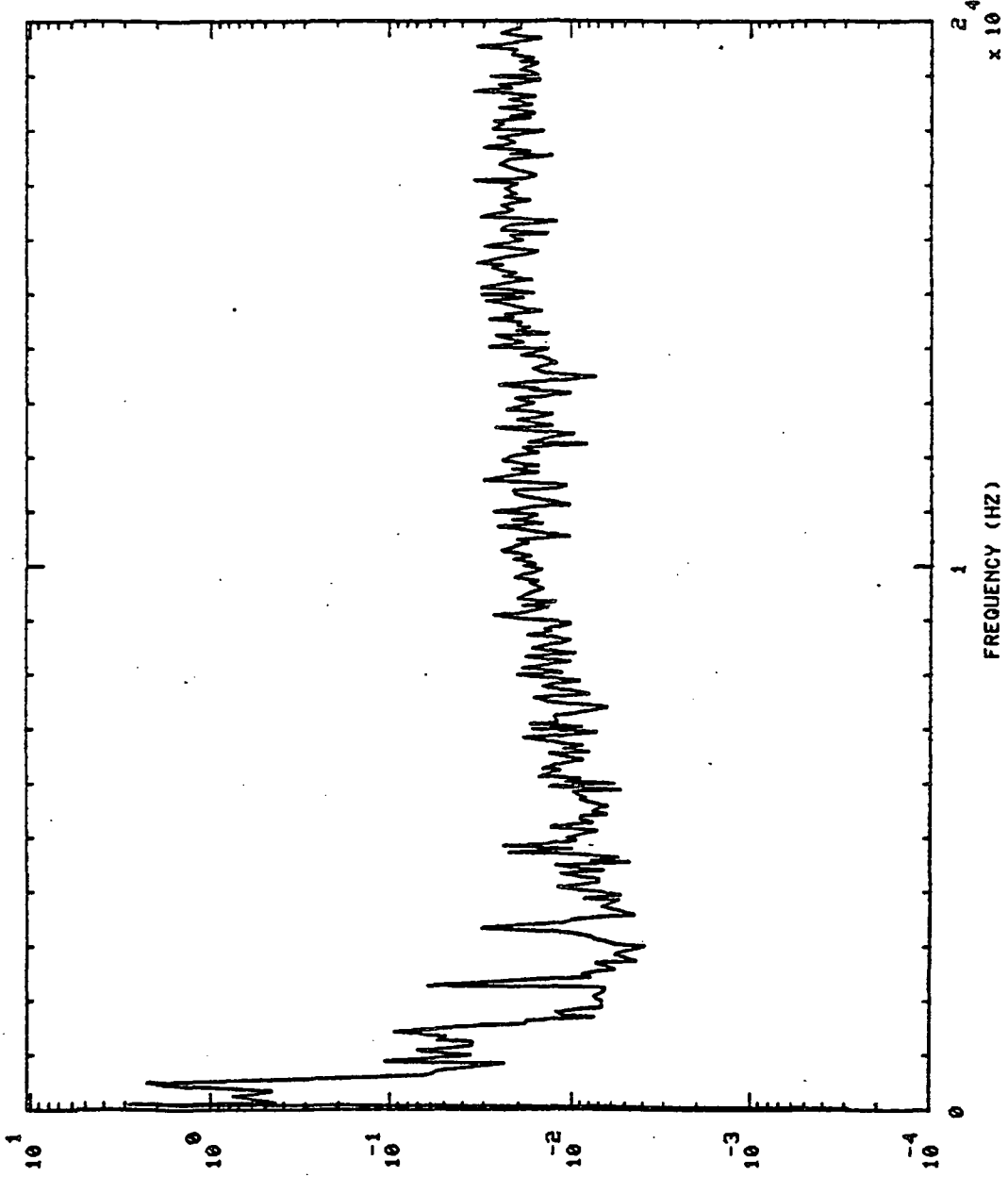


2 4  
x 10

S+ 150.01H0,'S

FPB PC

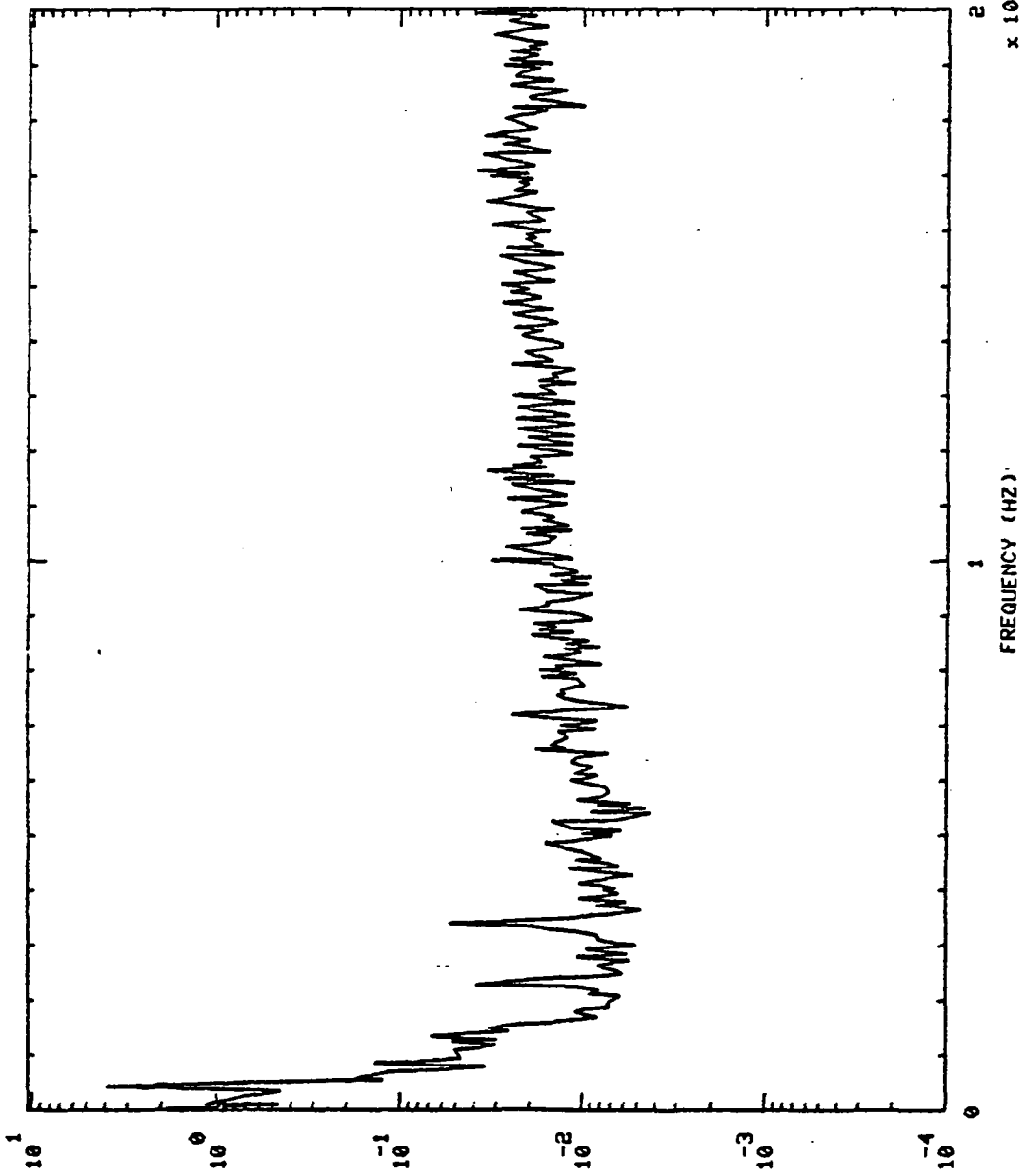
901322



P G / HZ

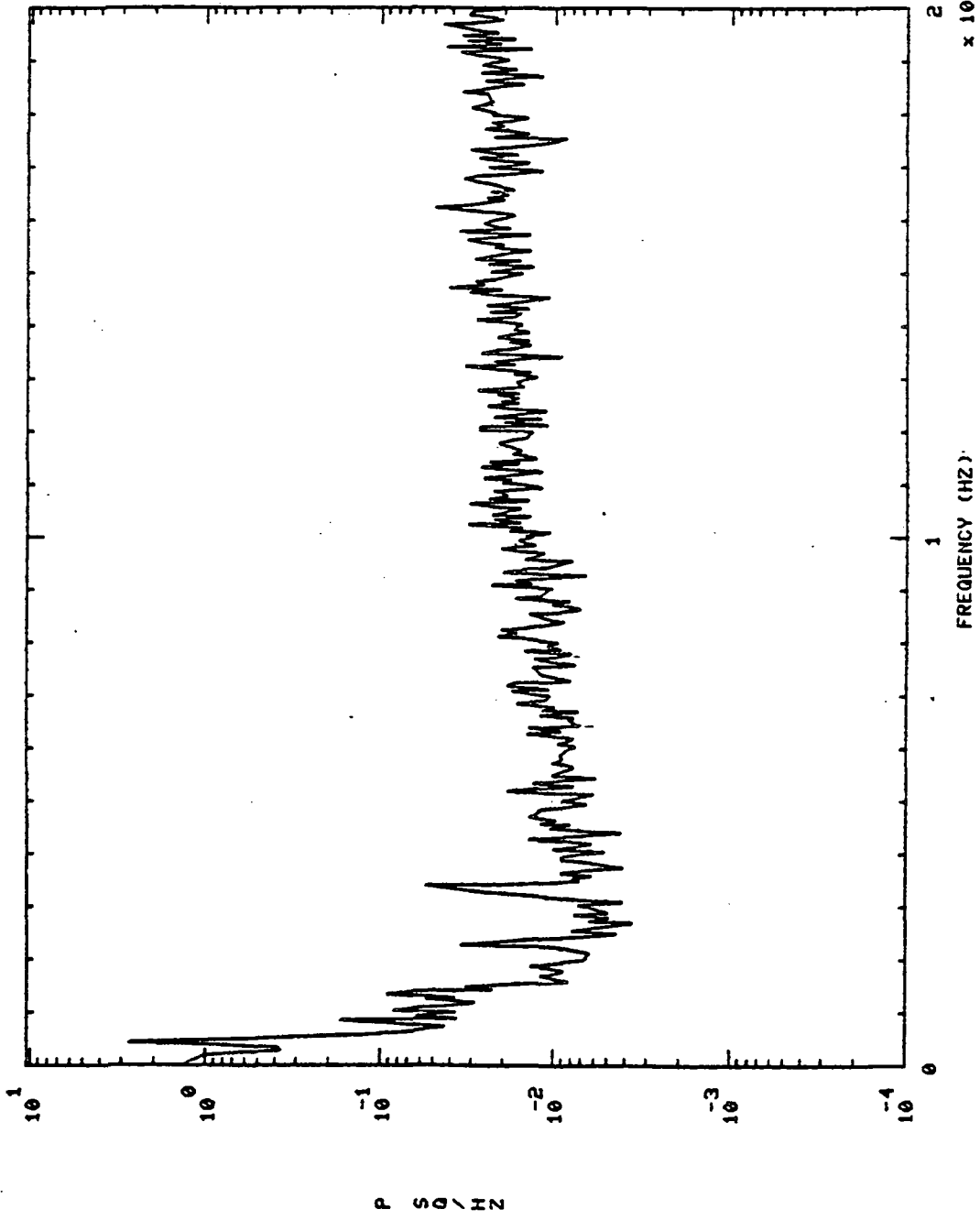
S+ 170.01H0, 'S.

901322 FFB PC



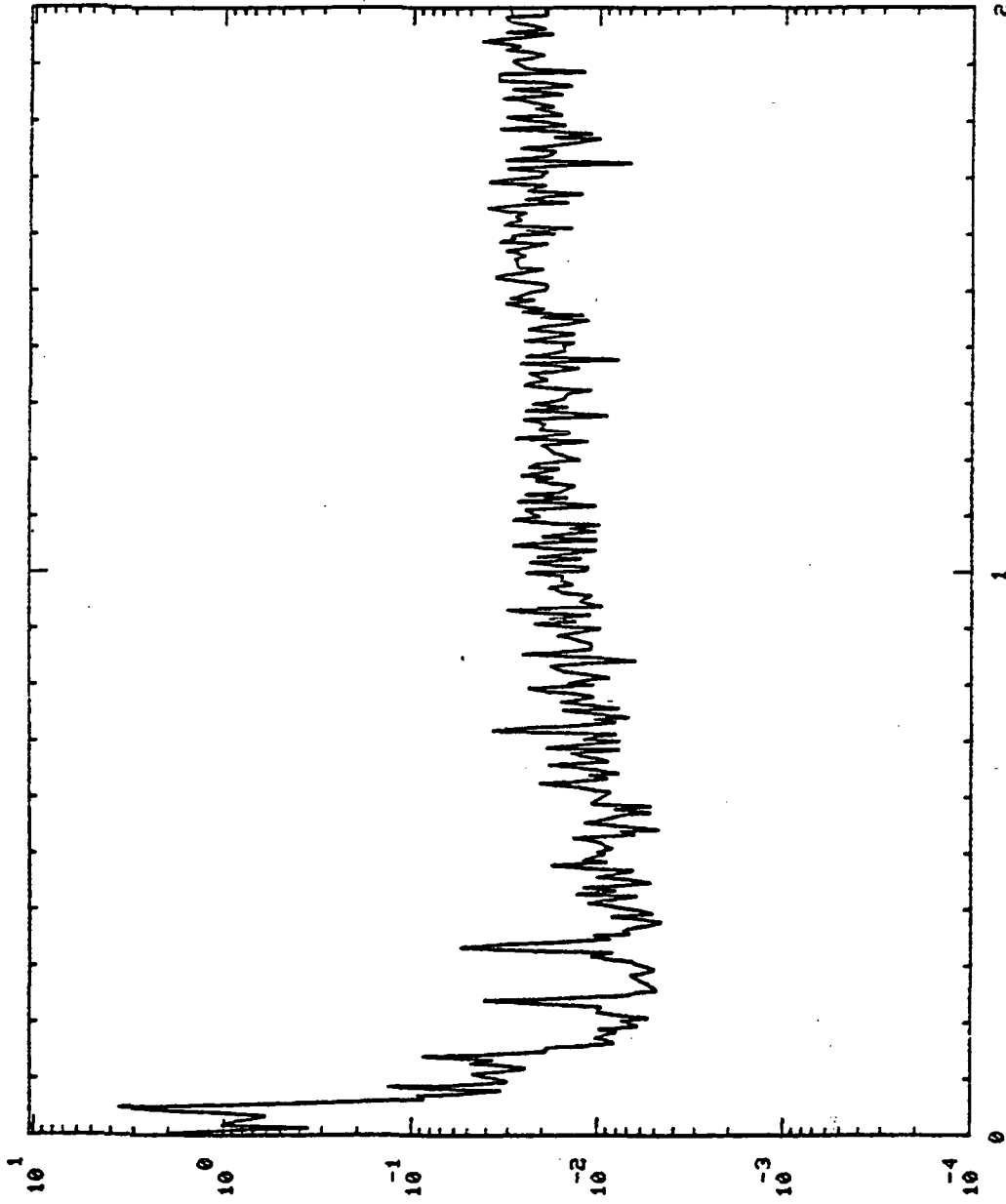
P SQ / HZ

901322 FPB PC S+ 190.01H0, 'S



901322 FFB PC

S+ 210.01H0,'S



P S \ HZ

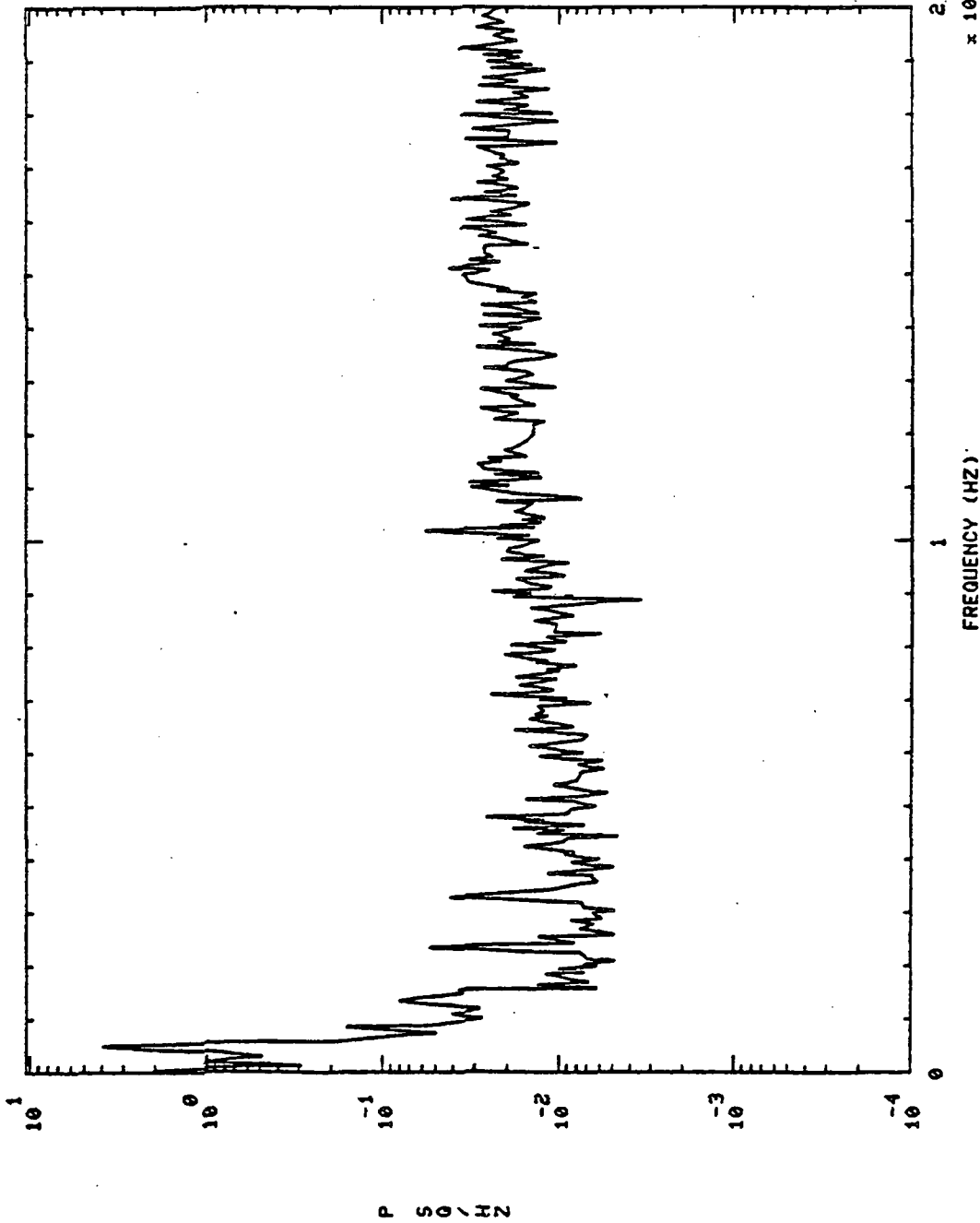
FREQUENCY (HZ)

2.4  
 $\times 10^4$

S+ 230.01H0.'S

FPB PC

901322

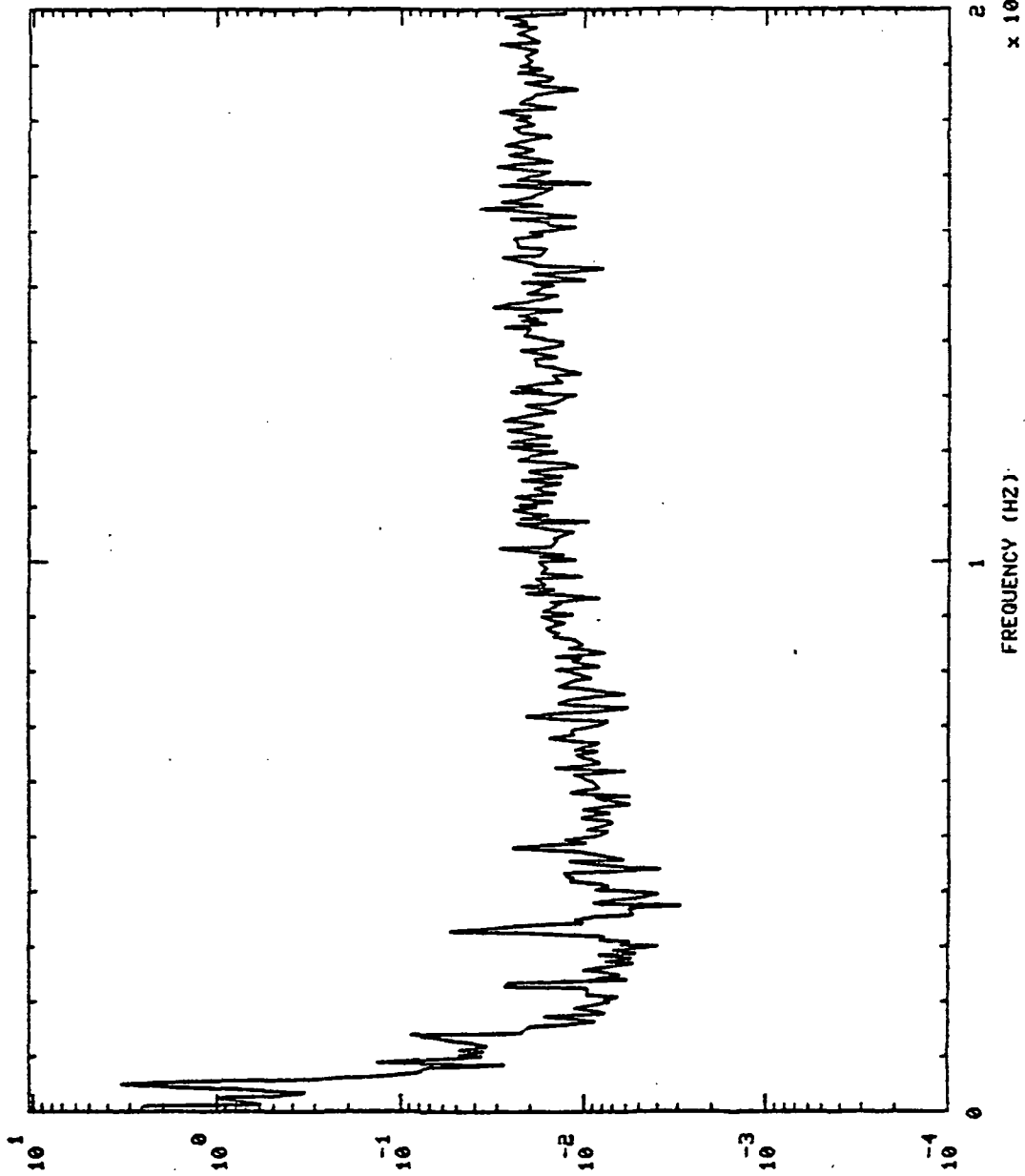




S+ 260.01H0,'S

FPB PC

901322



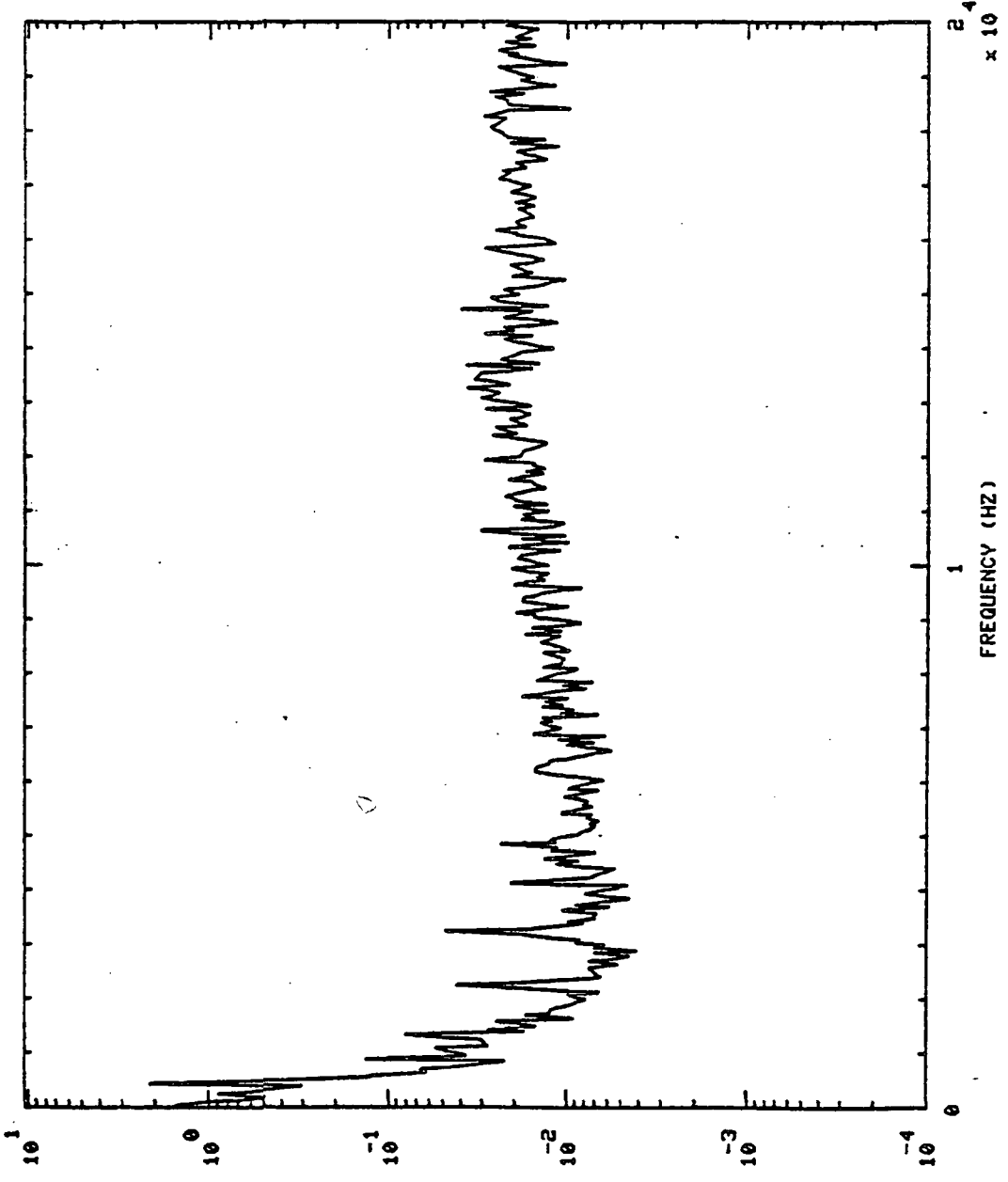
PSD / Hz

FREQUENCY (HZ)

2.4  
x 10<sup>4</sup>

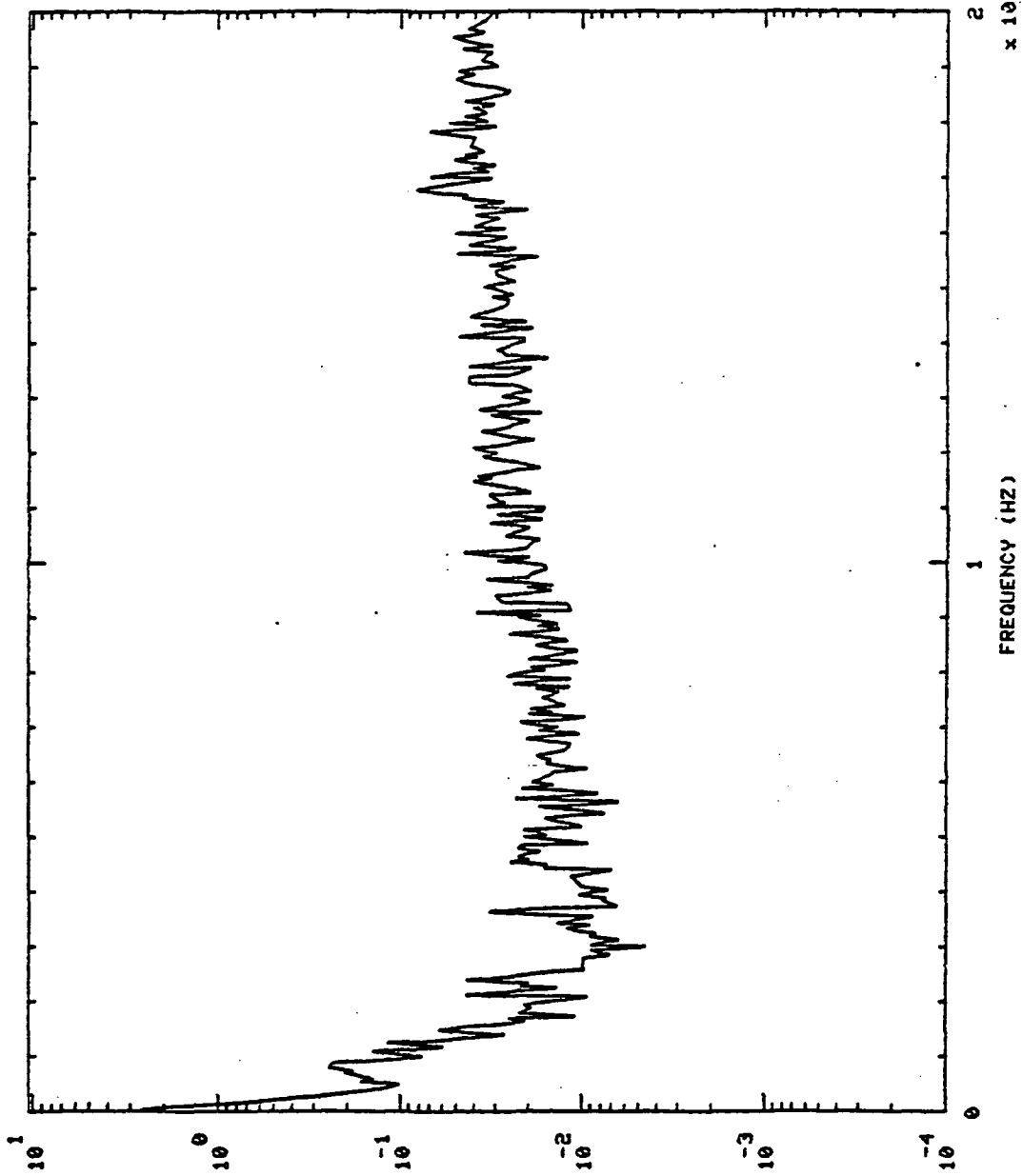
S+ 280.01H0.'S

901322 FFB PC



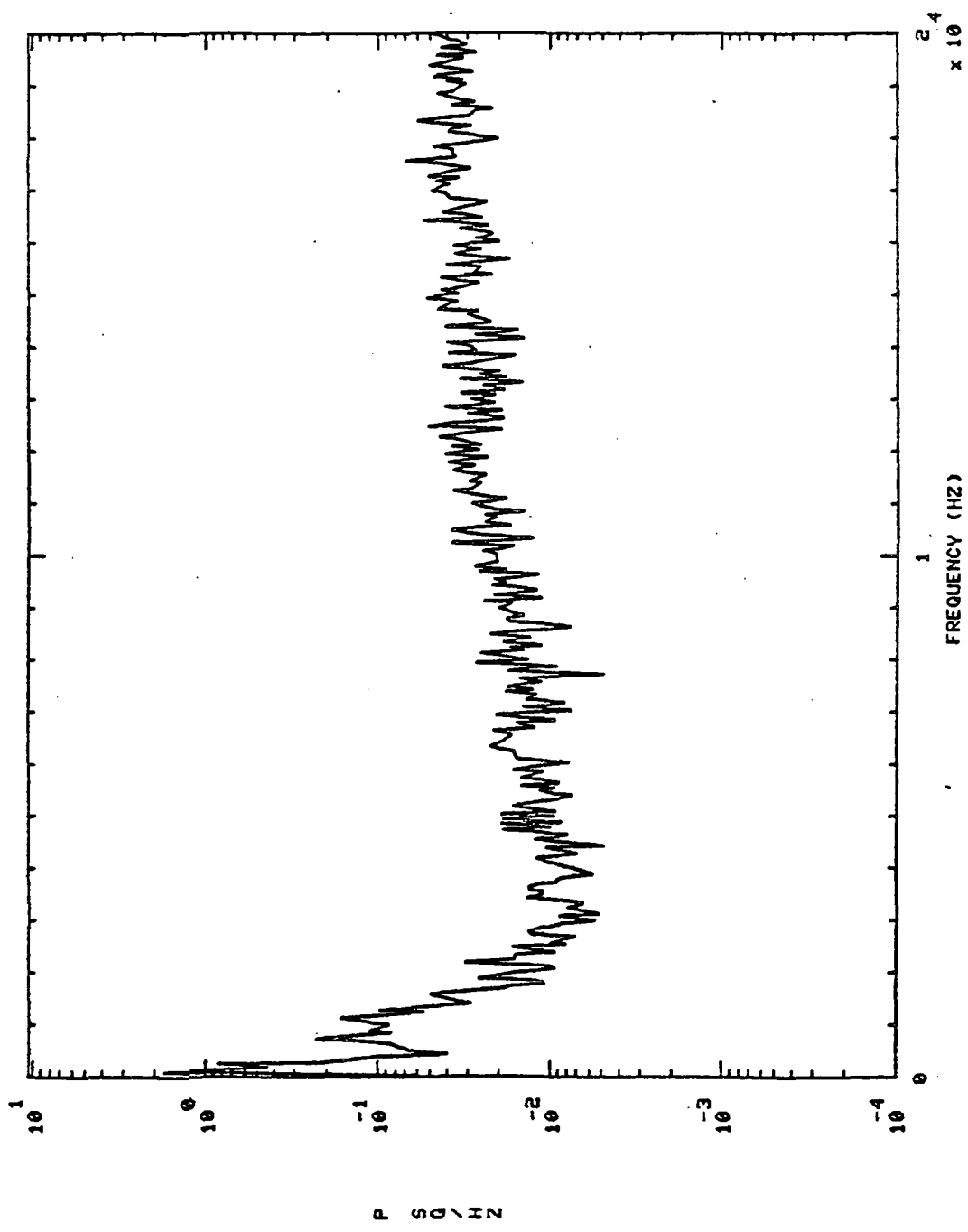
P S O \ H N

901322 OPB PC PR DC S+ 6.01H0.'S



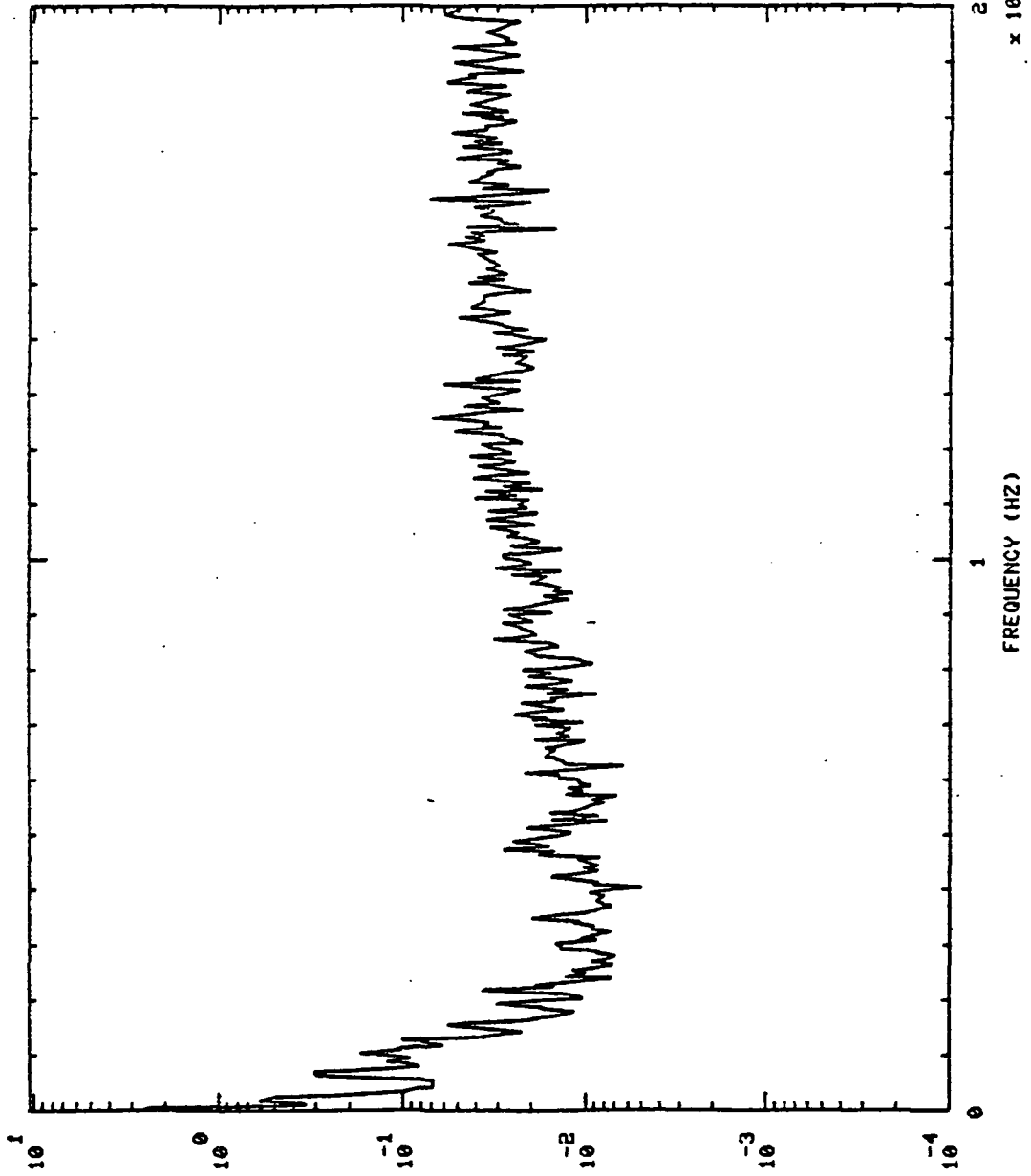
P S G / H Z

901322 OPB PC PR DC S+ 130.01H0.'S



S+ 150.0110.'S

901322 OPB PC PR DC



PSQ / HZ

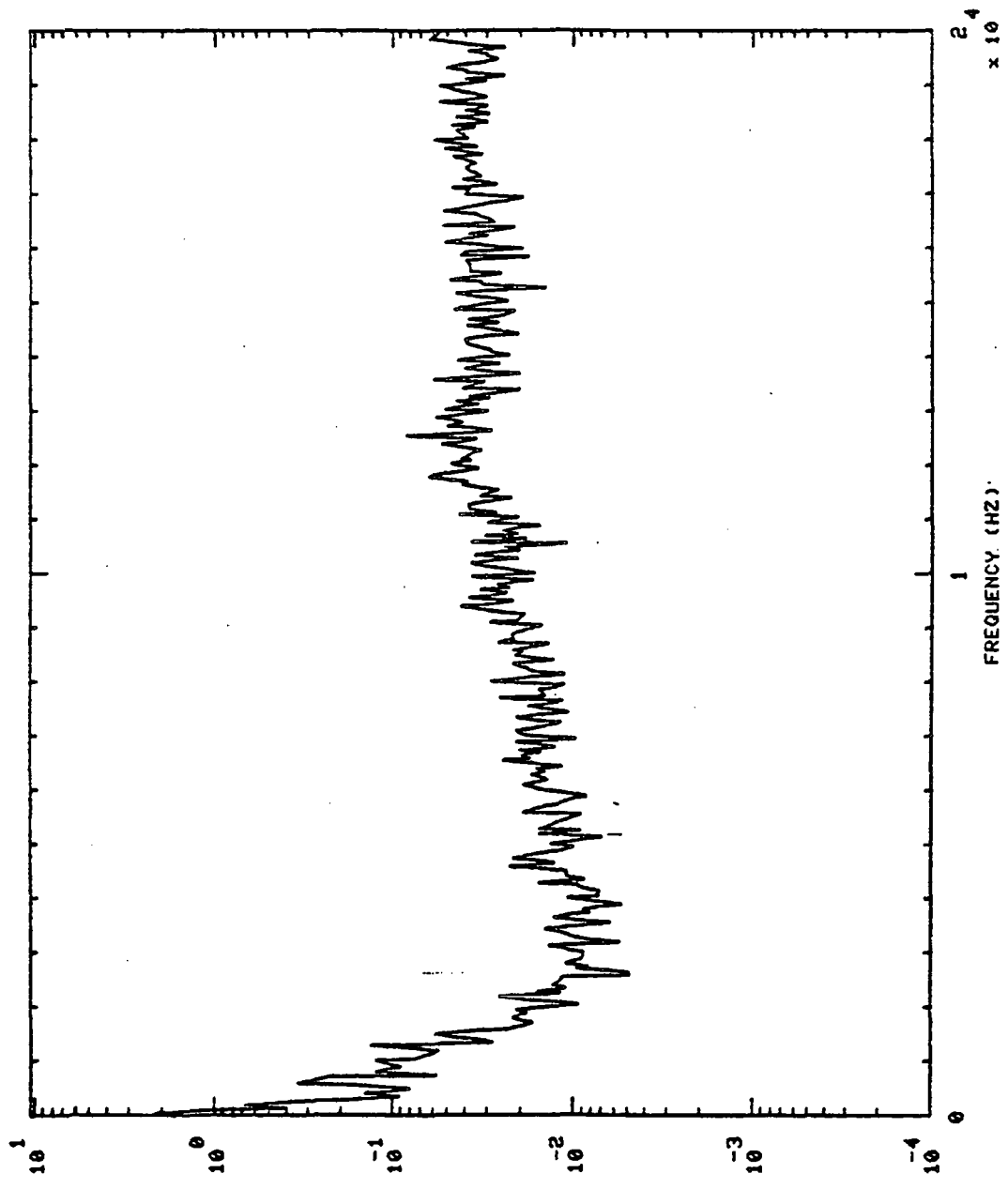
2.4  
x 10^4

FREQUENCY (HZ)

S+ 170.01H0,'S

OPB PC PR DC

901322

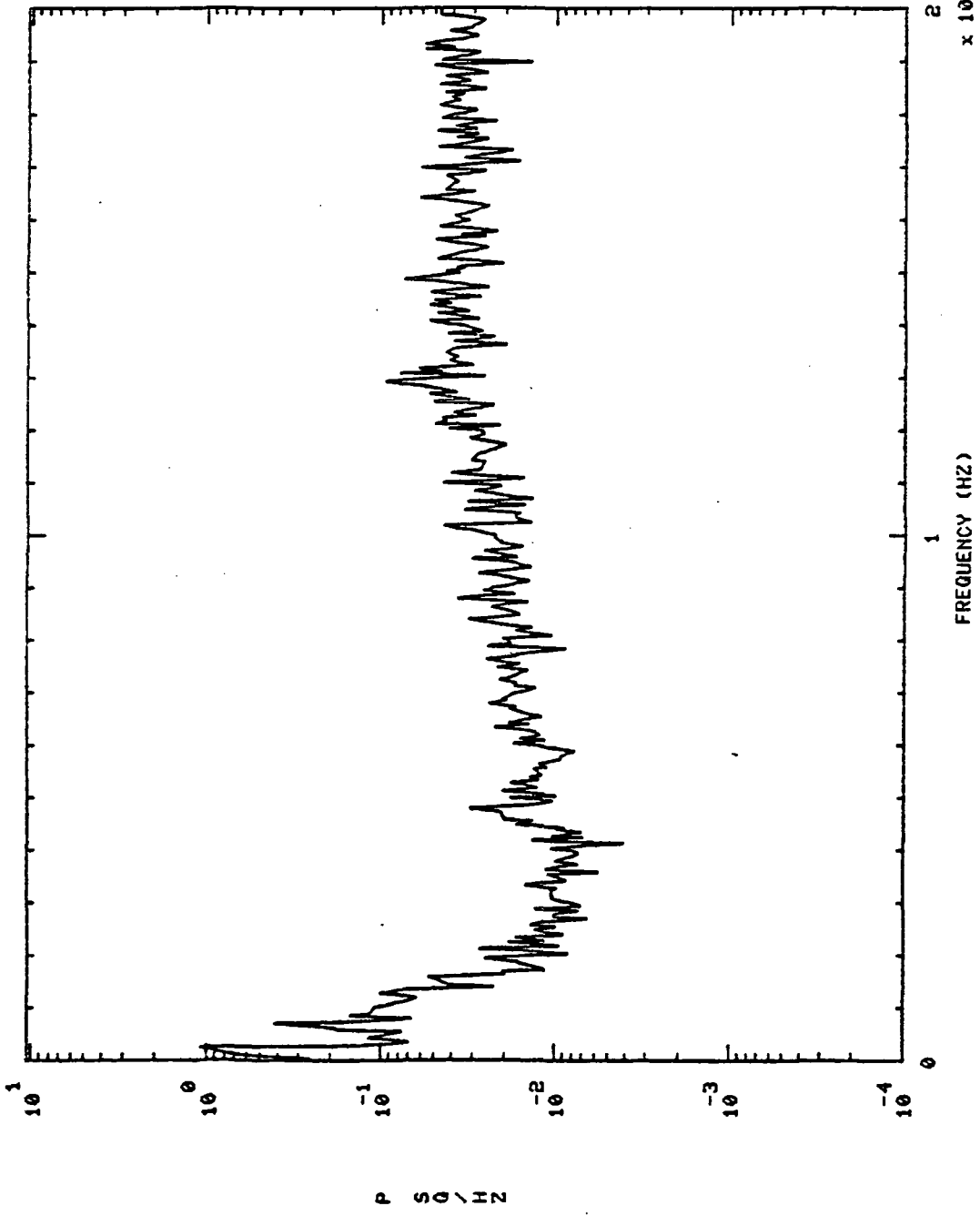


$10^4$   
 $\times 10$

1  
FREQUENCY (HZ)

P S D / H Z

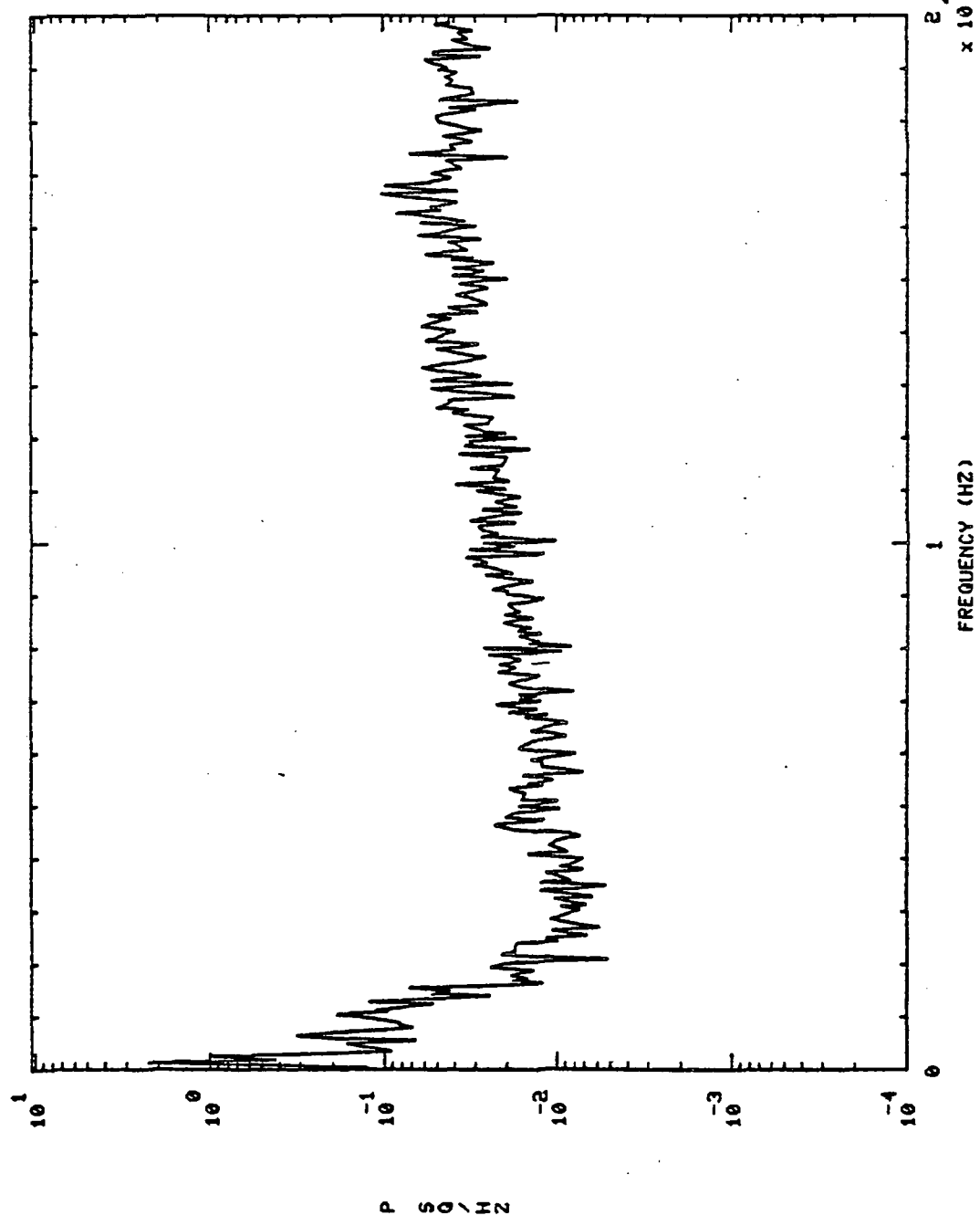
901322 OPB PC PR DC S+ 190.01H0,'S



S+ 210.01H0,'S

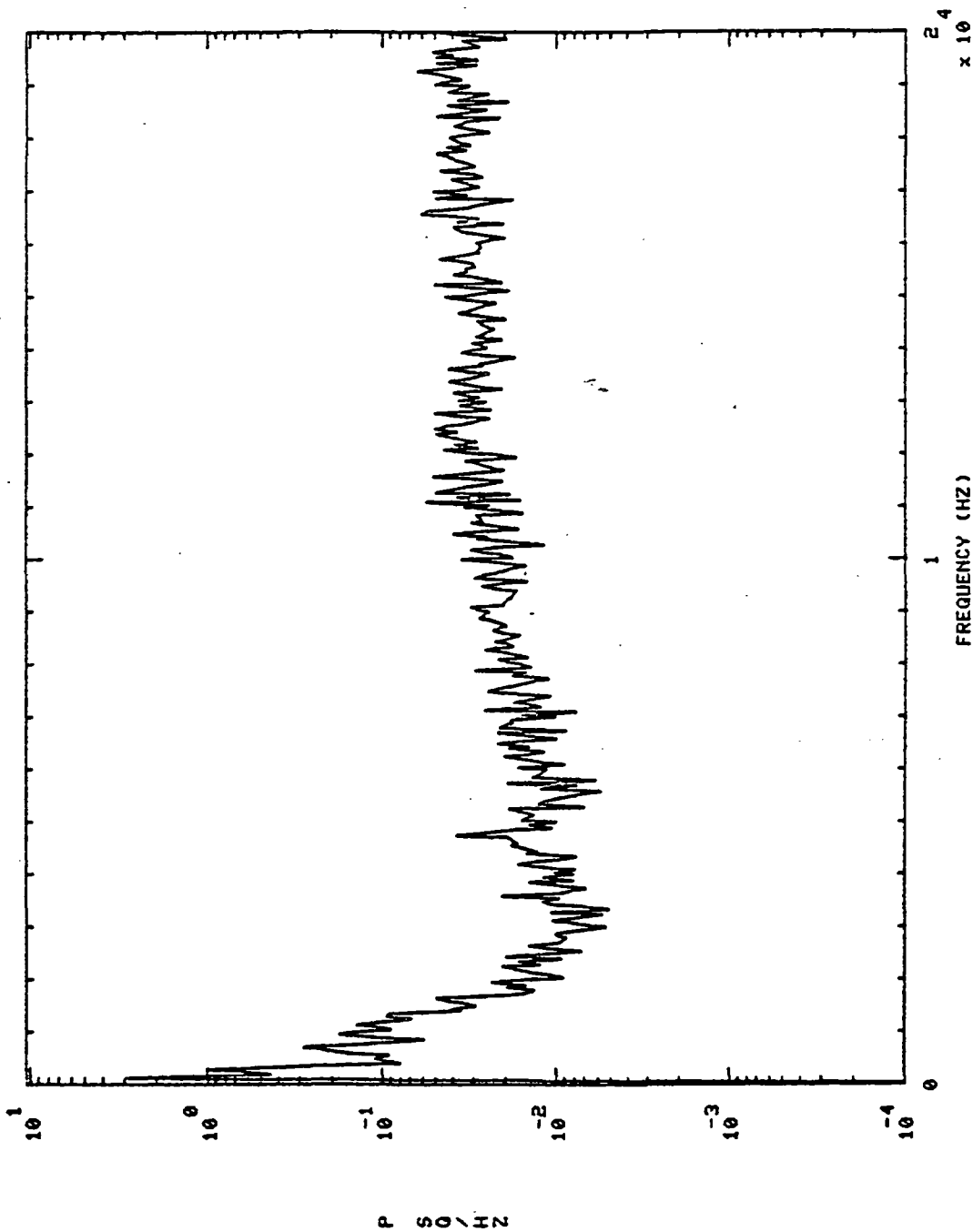
OPB PC PR DC

901322





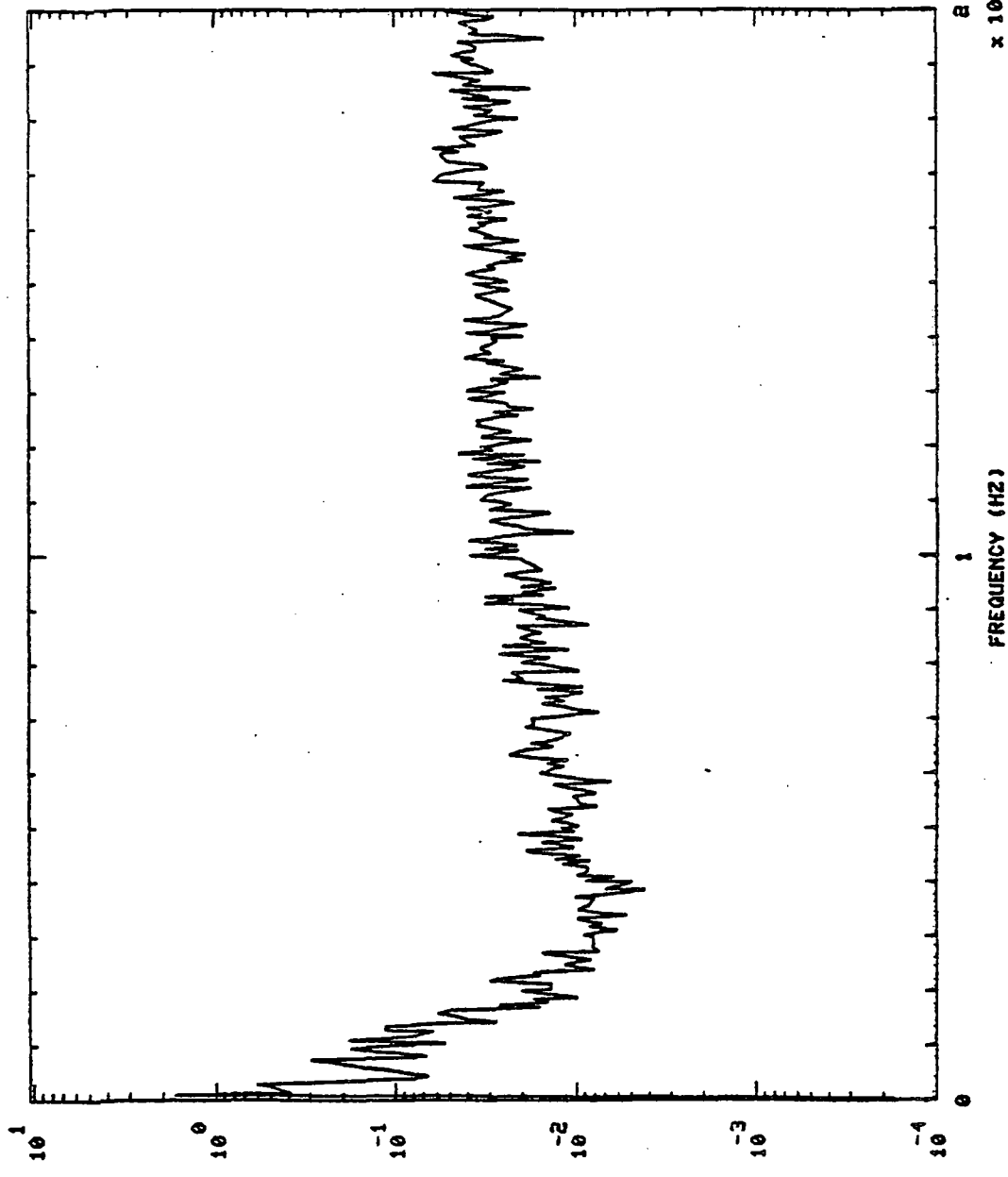
801322 0PB PC PR DC 5+ 230.01H0.'S



S+ 260.01H0.'S

OPB FC PR DC

901322

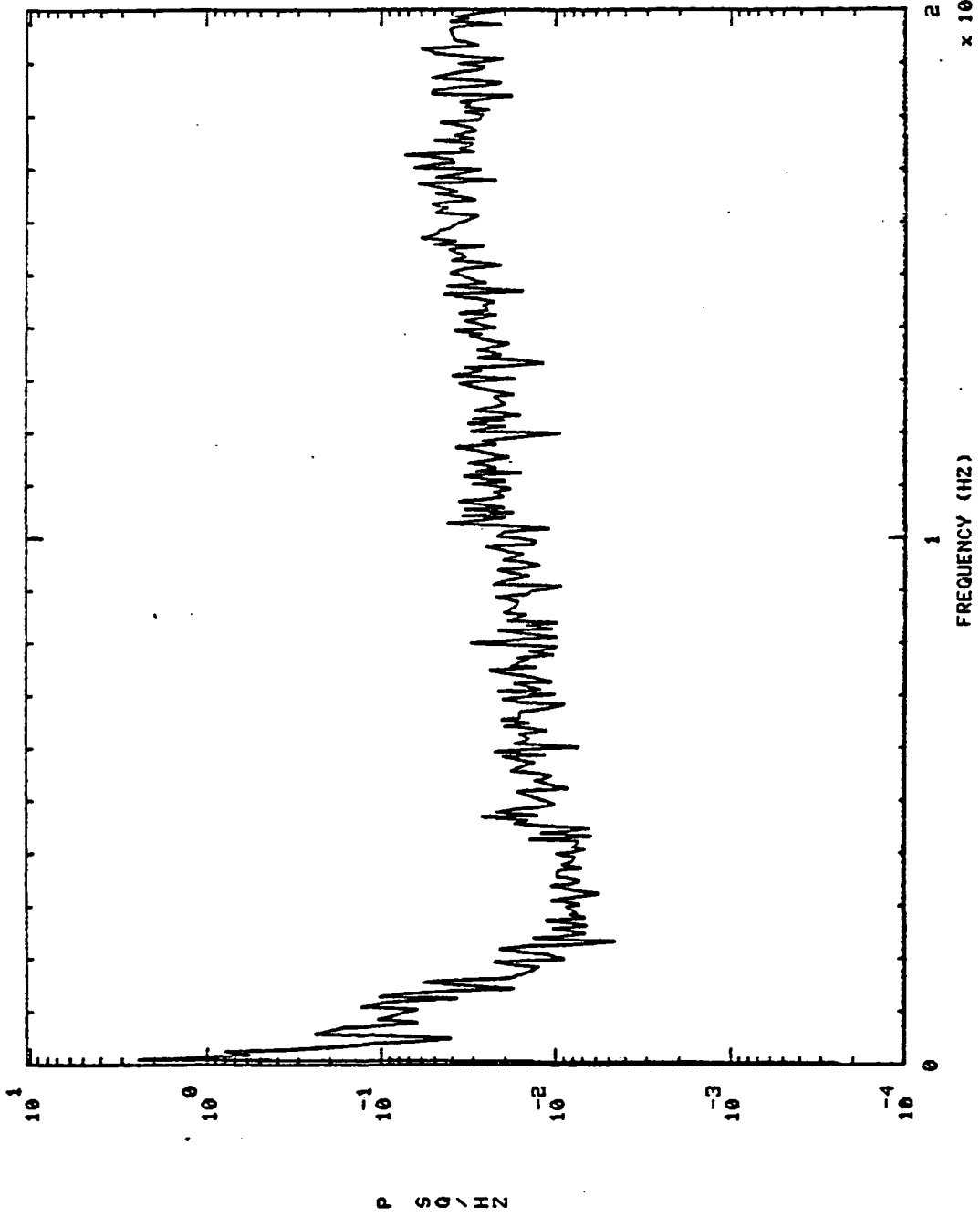


P S D / H Z

FREQUENCY (H Z)

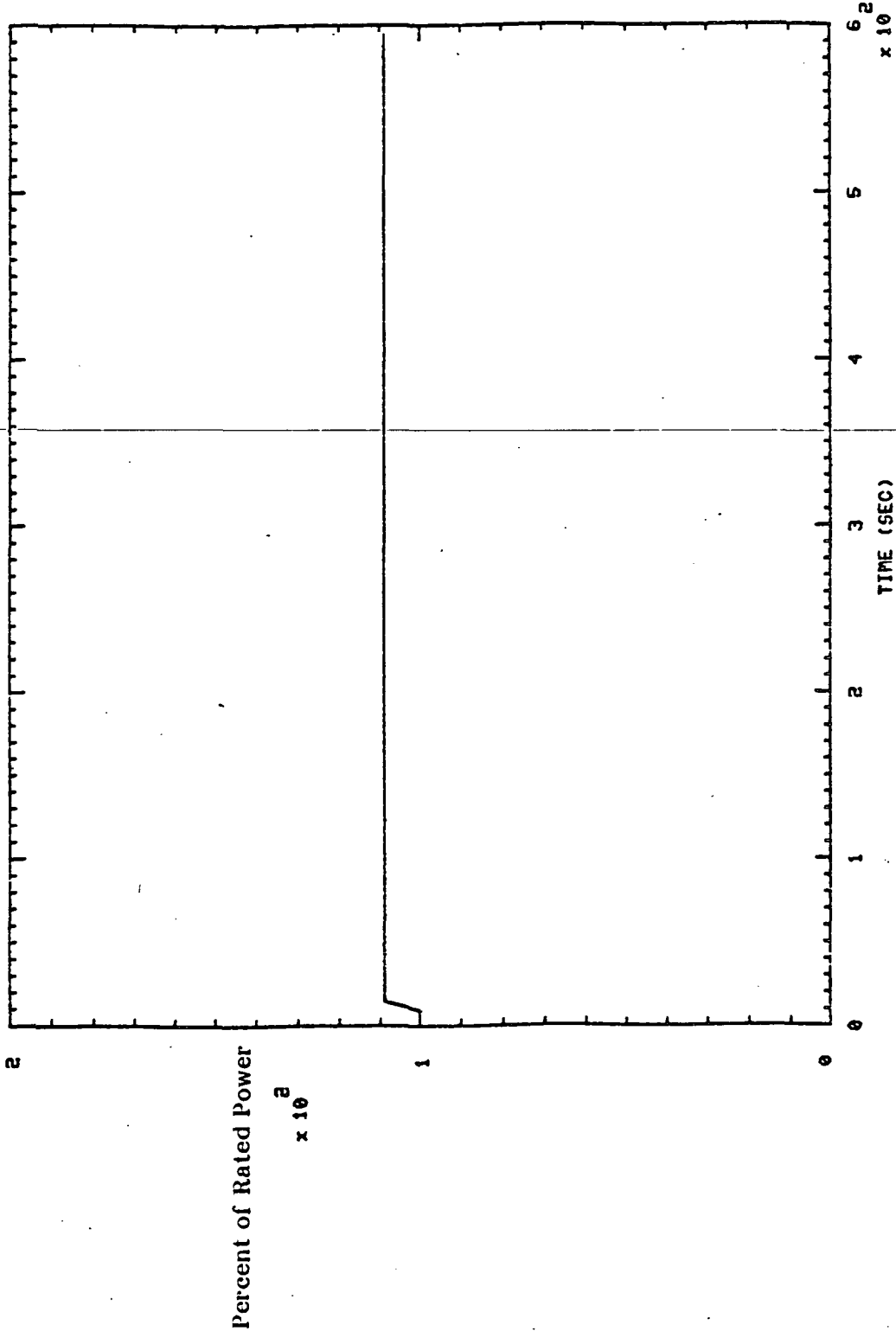
x 10<sup>4</sup>

901322 OPB PC PR DC S+ 280.01H0,'S

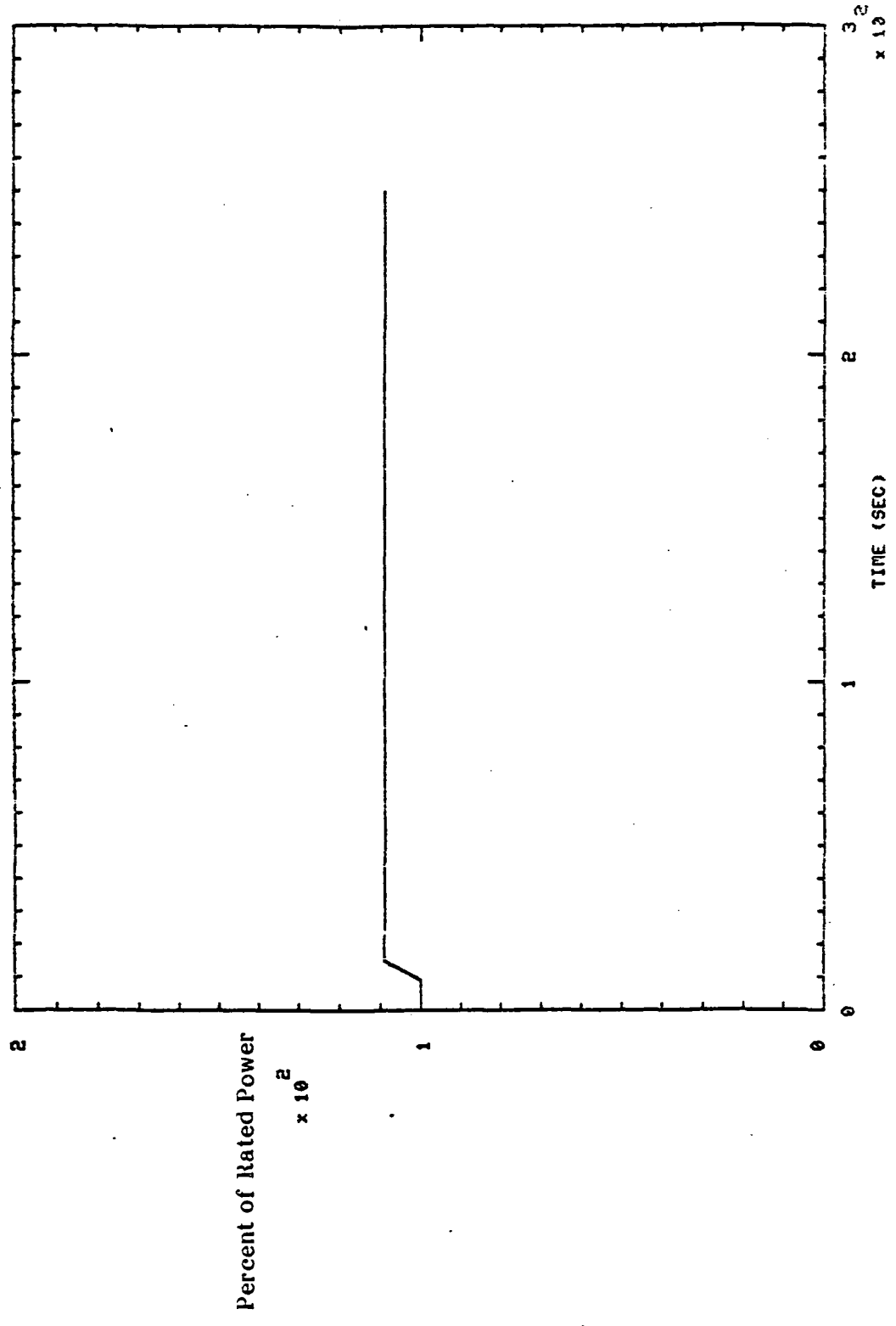


901384 THRUST

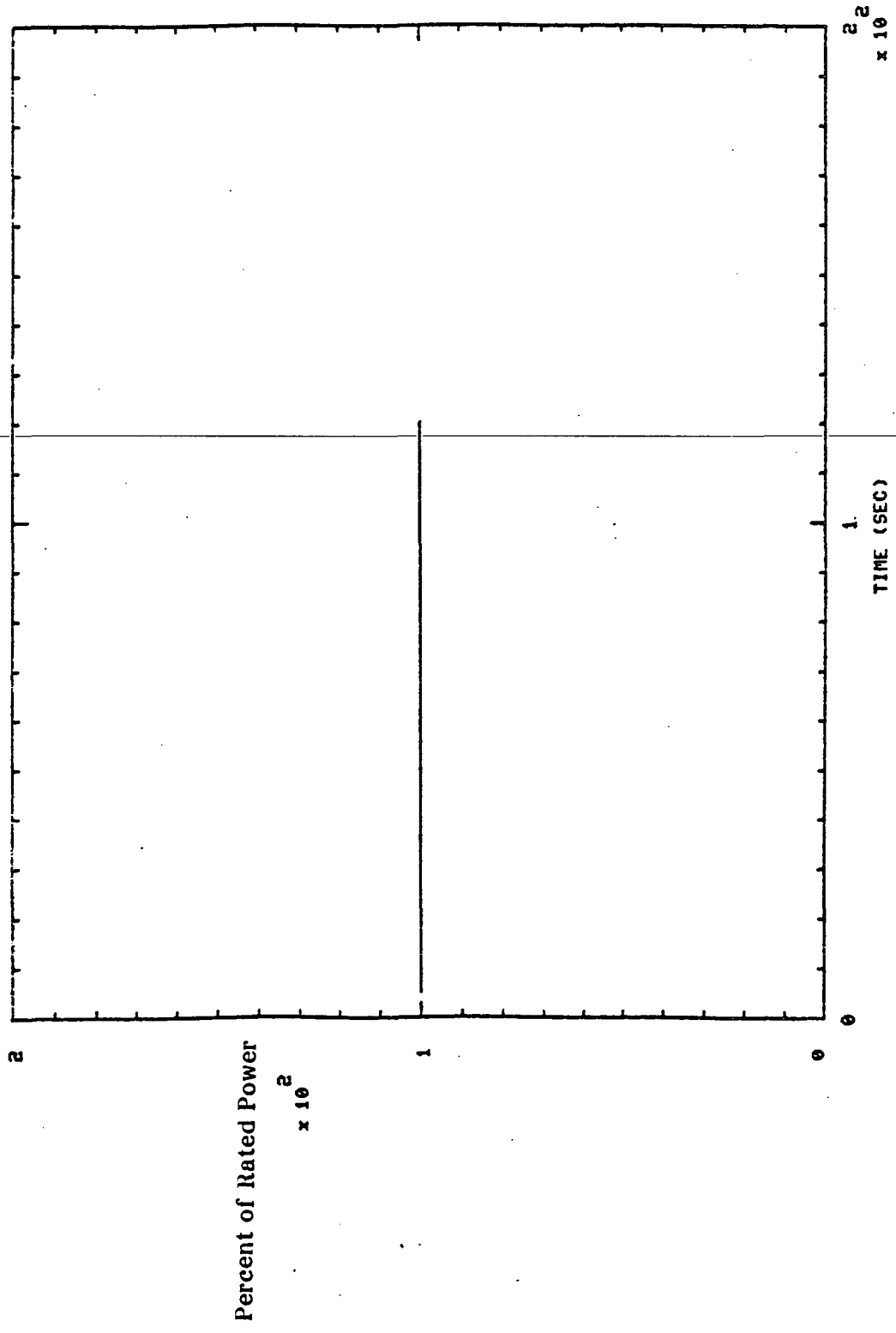
(UNFILTERED )



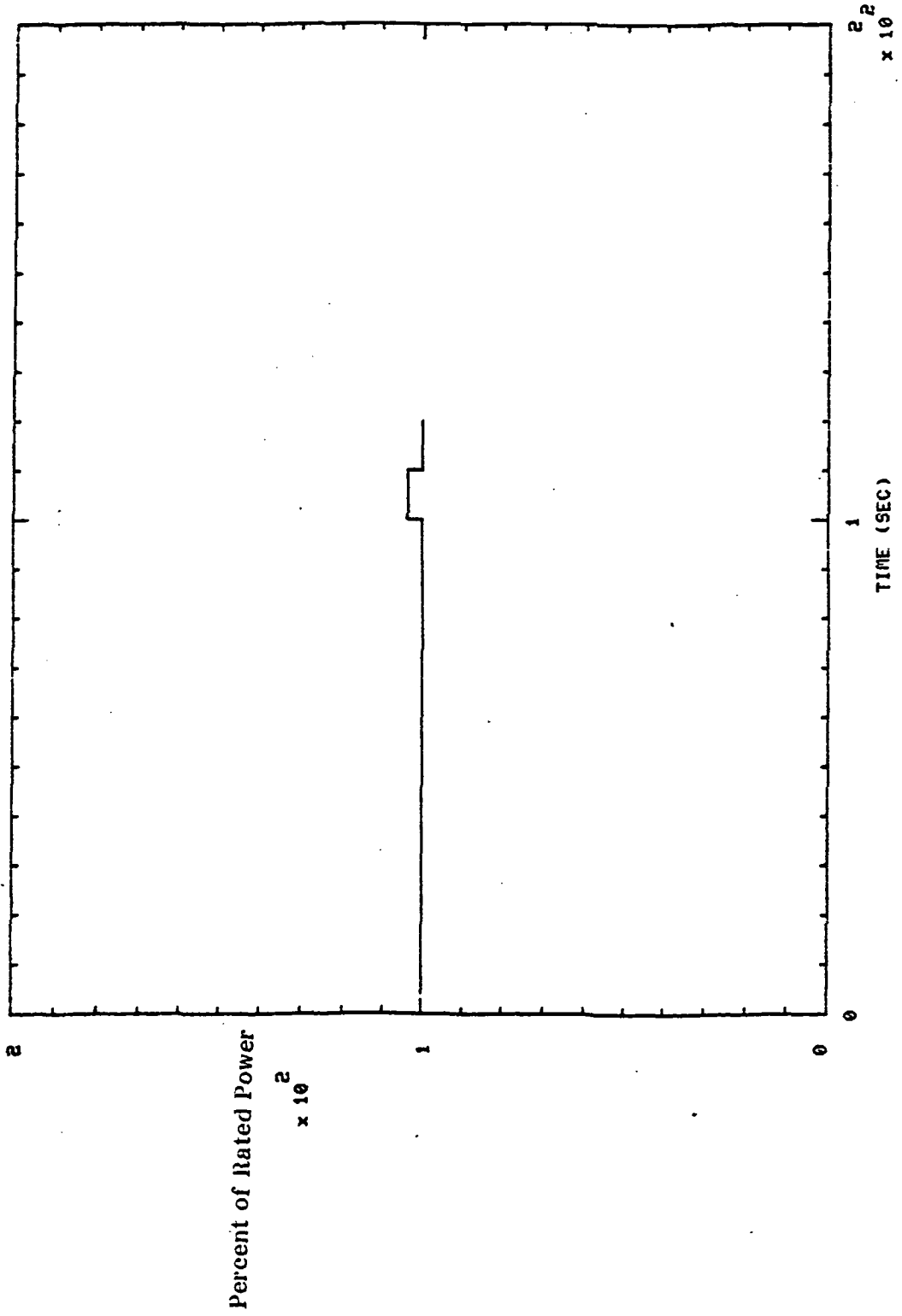
901385 THRUST (UNFILTERED )



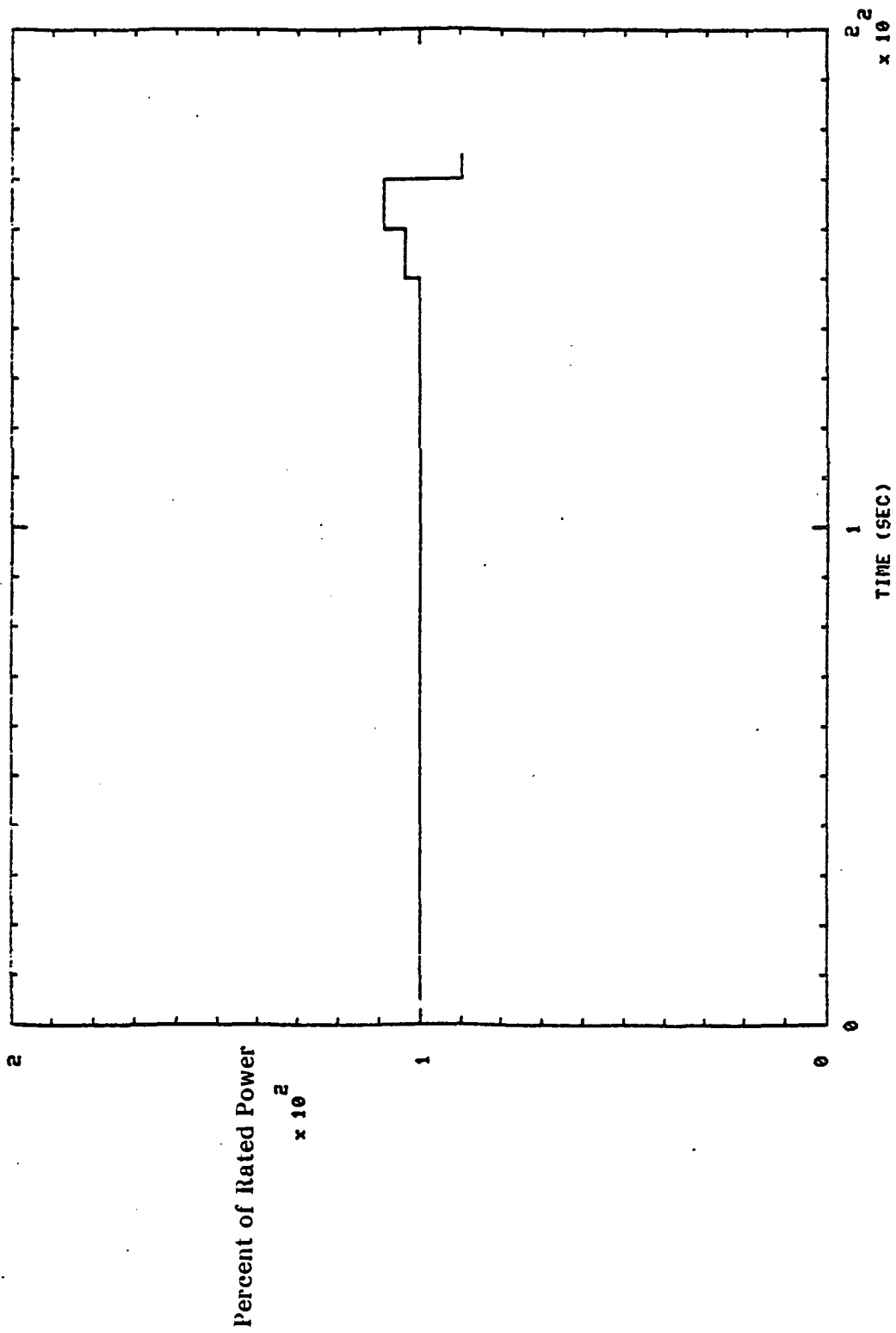
901388 THRUST (UNFILTERED )



901389 THRUST (UNFILTERED )

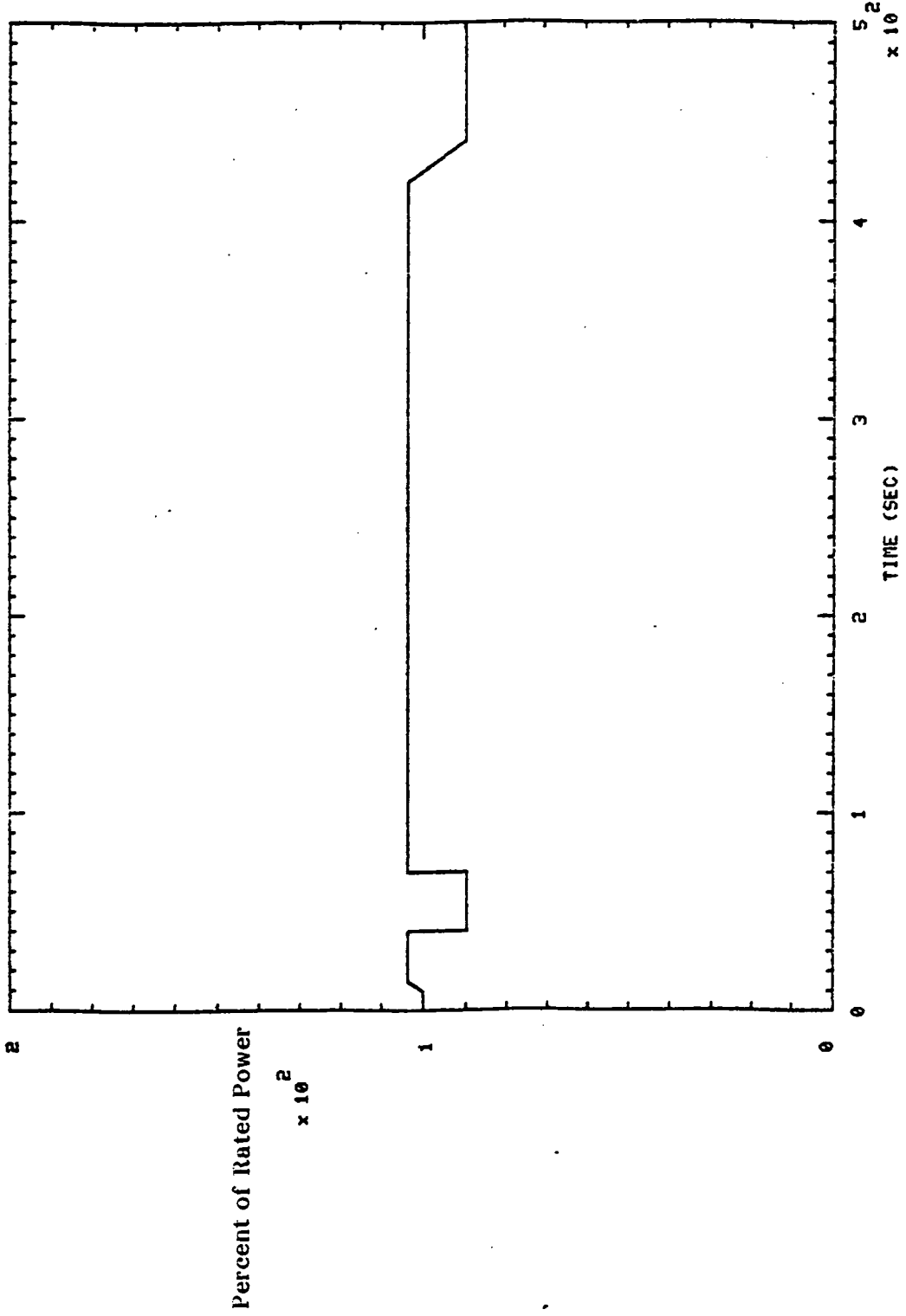


901390 THRUST (UNFILTERED )

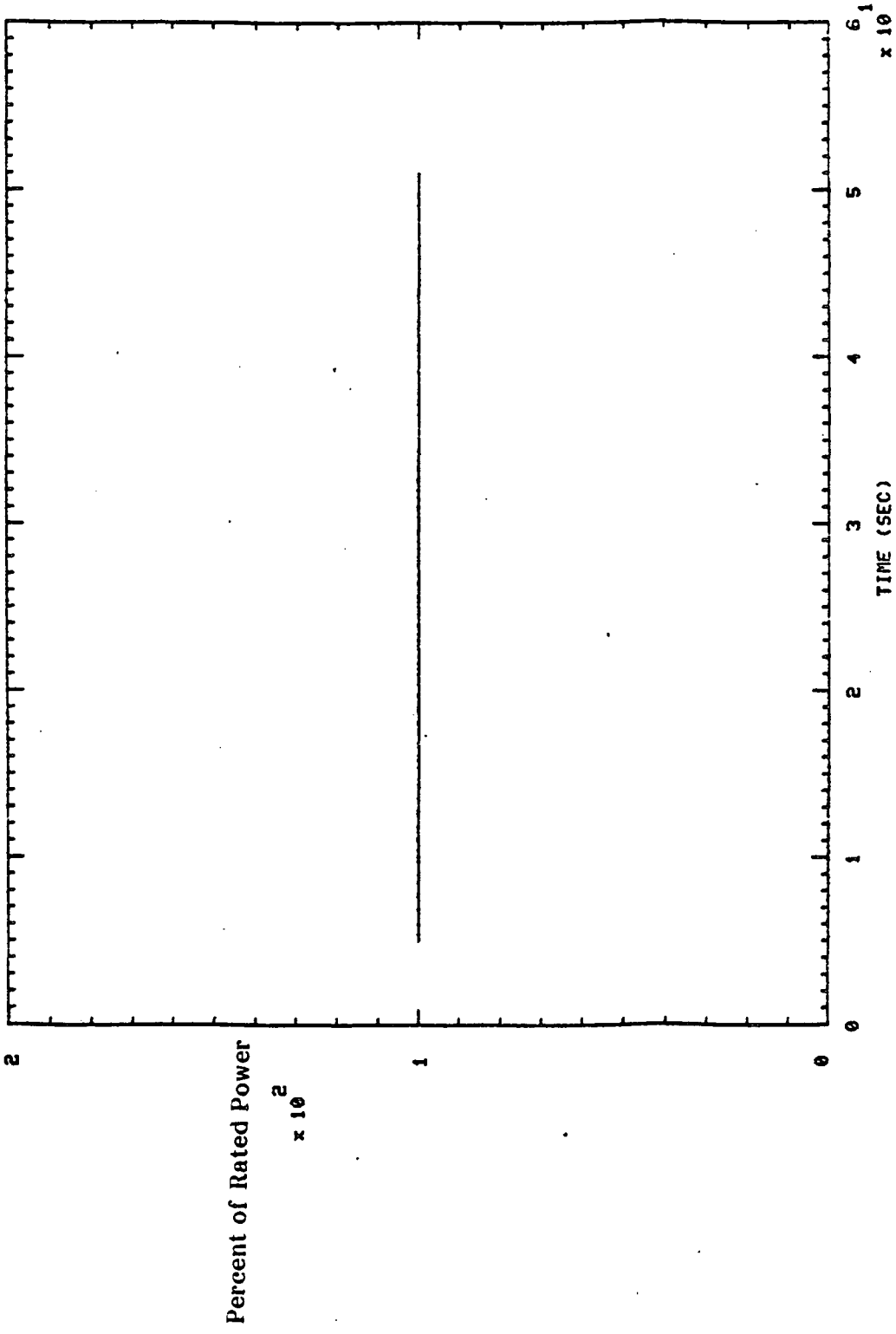




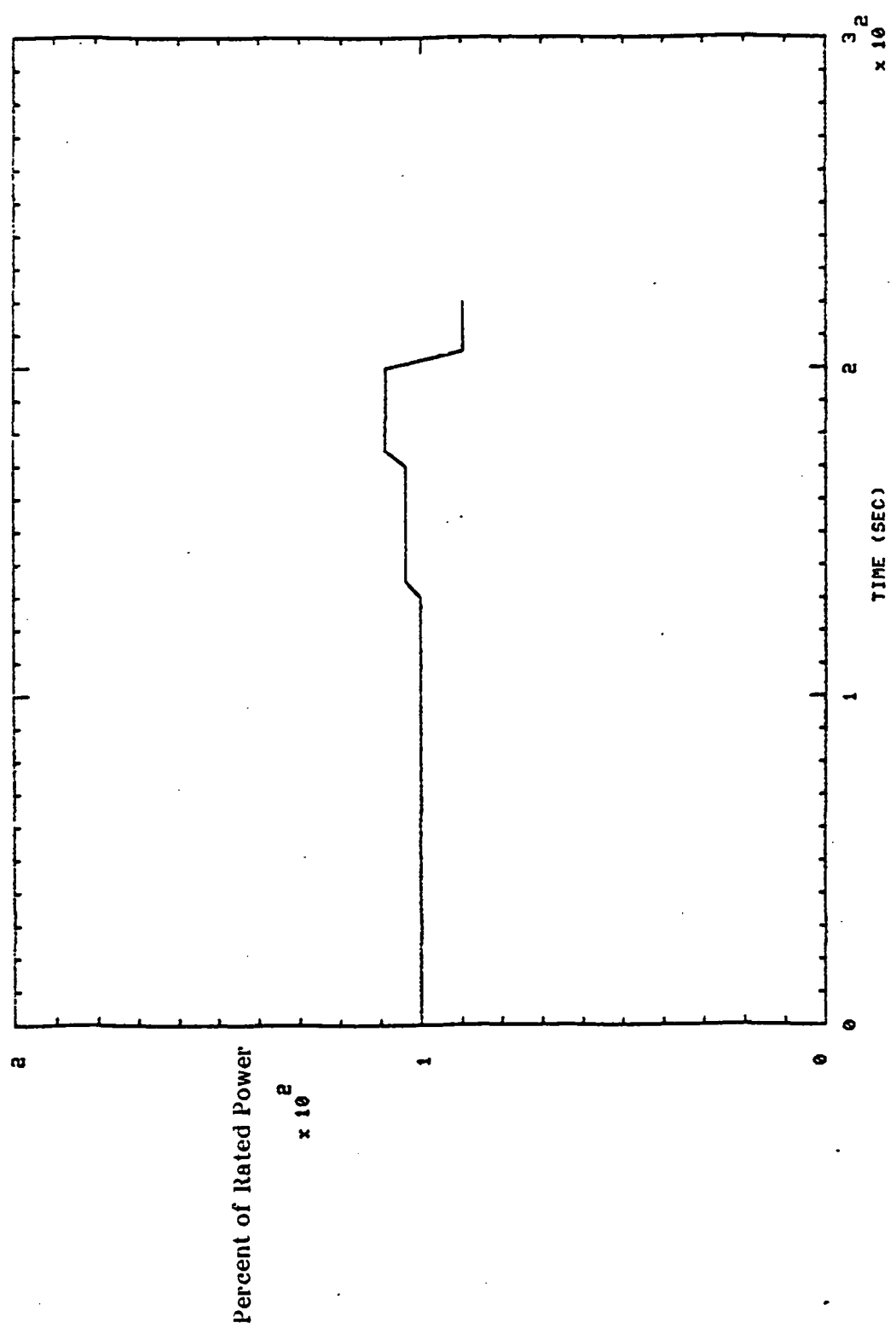
901391 THRUST (UNFILTERED )



901393 THRUST (UNFILTERED )

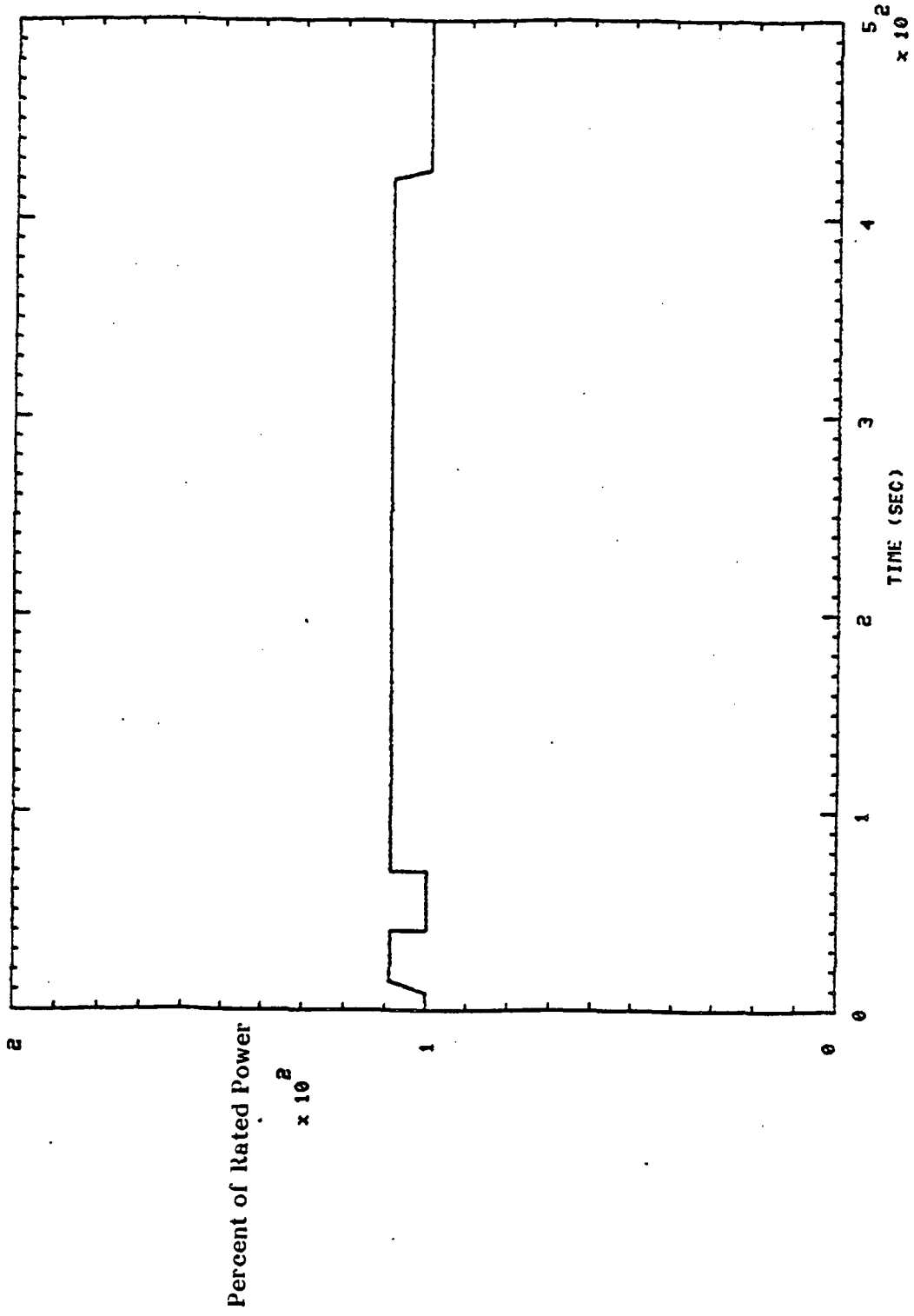


901394 THRUST (UNFILTERED )

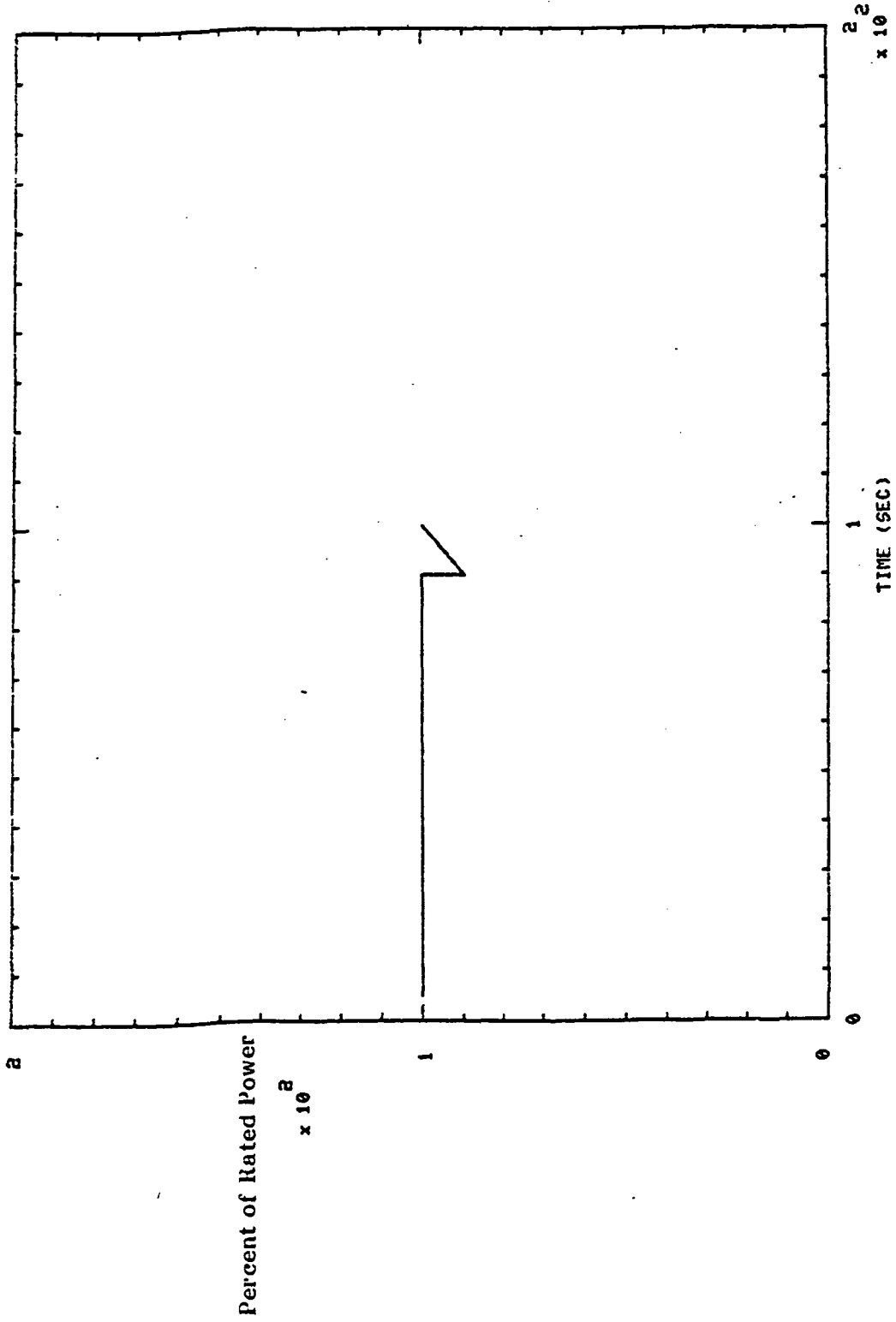


901395 THRUST

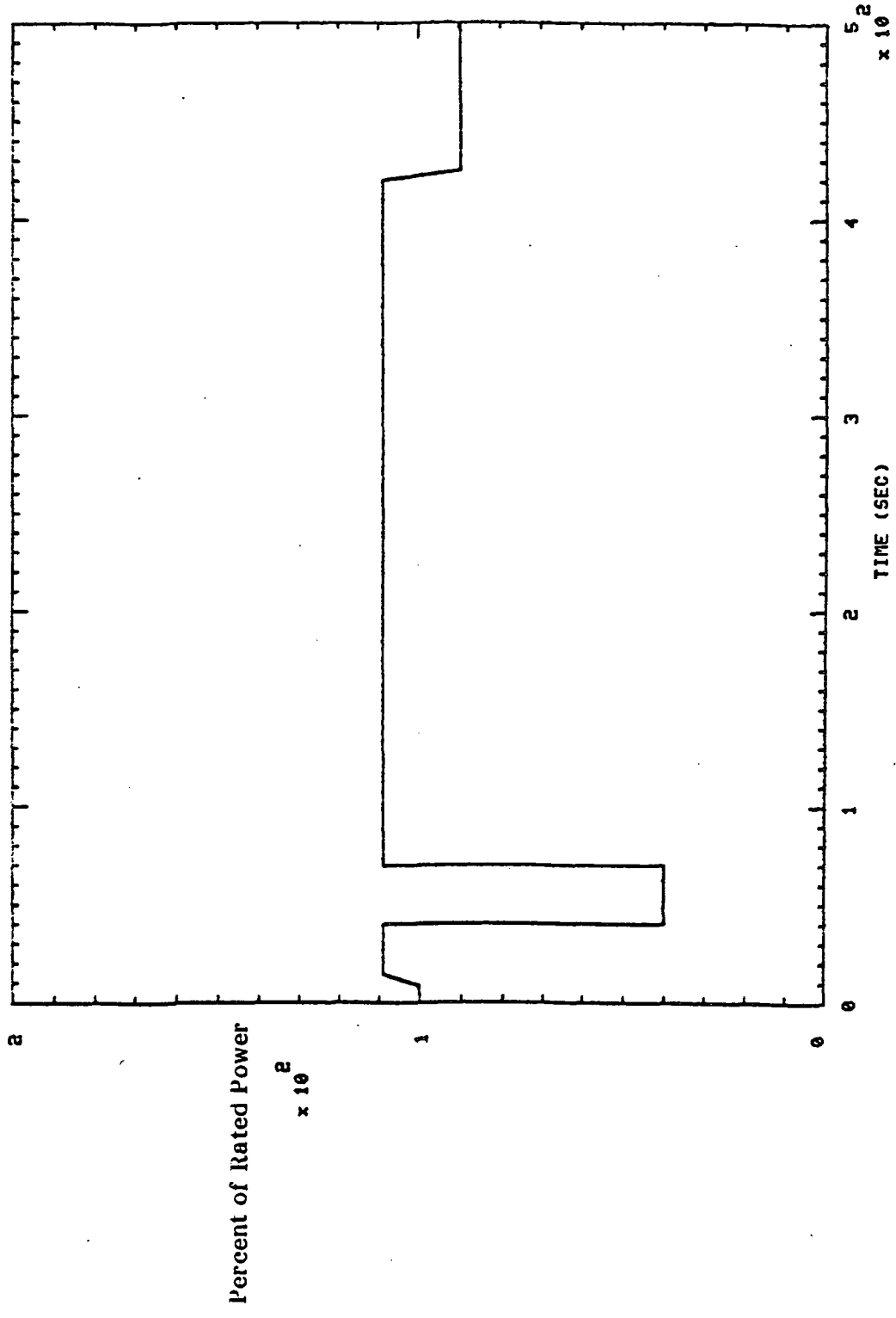
(UNFILTERED )



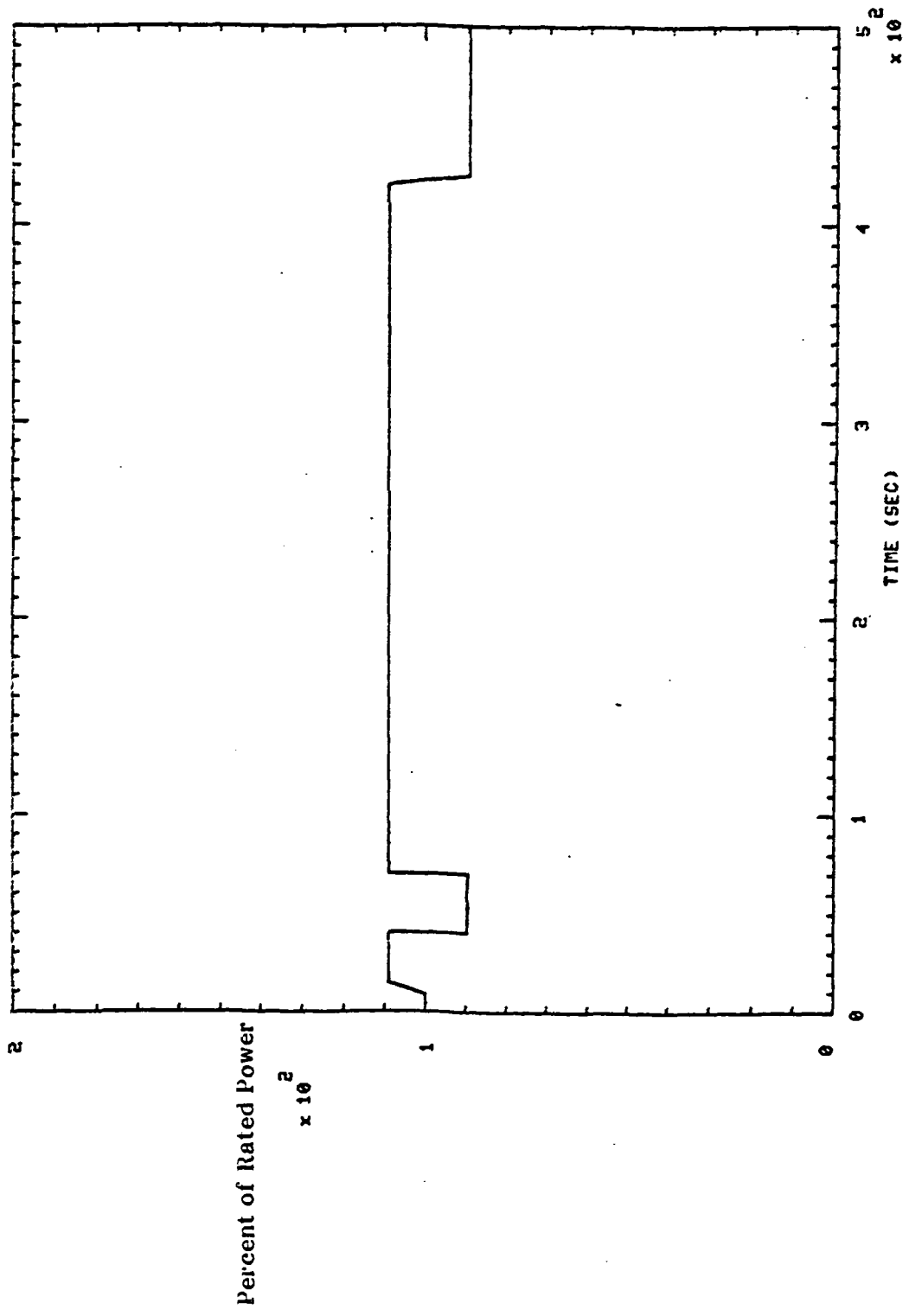
901397 THRUST (UNFILTERED)



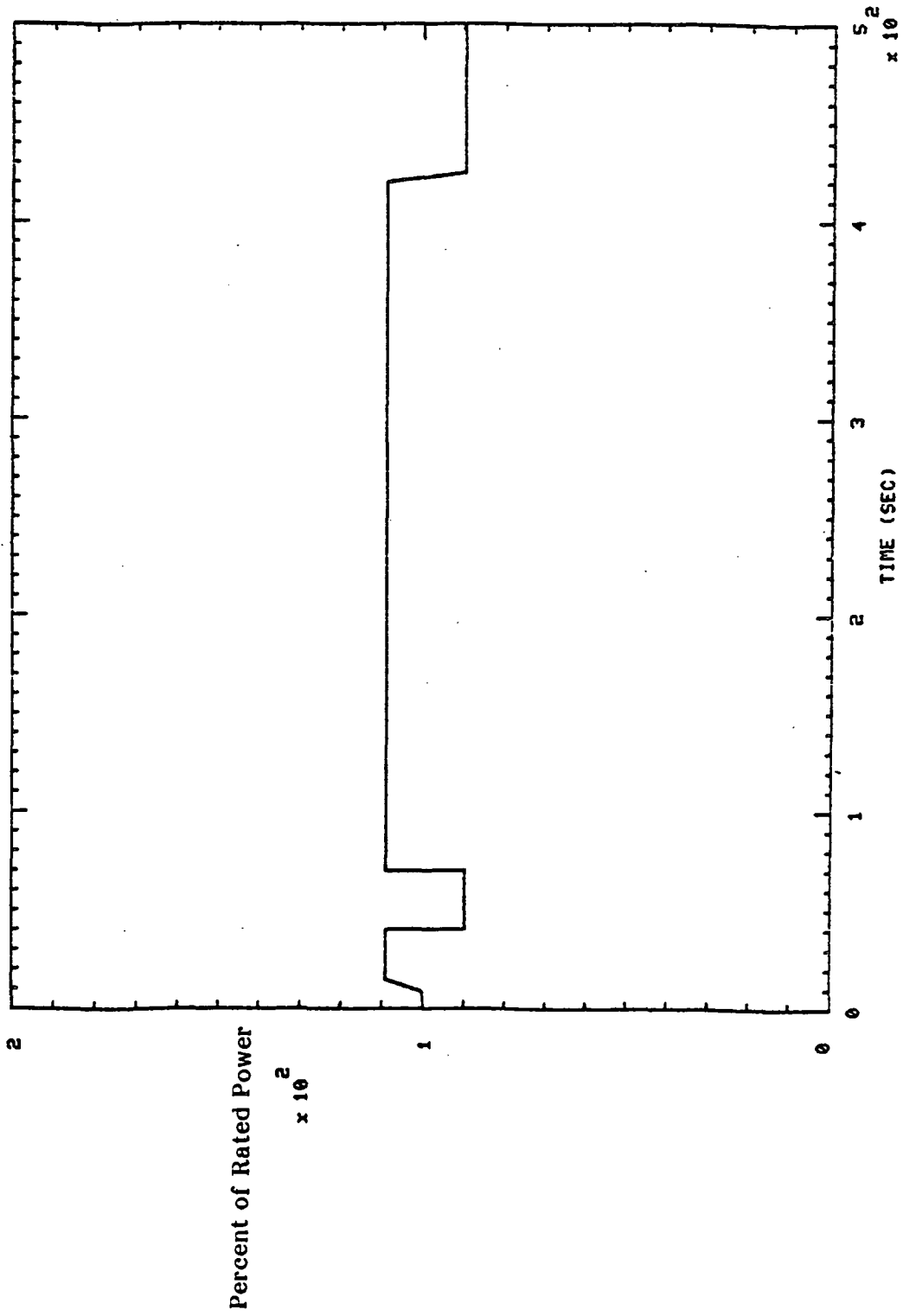
901398 THRUST (UNFILTERED )



901400 THRUST (UNFILTERED )

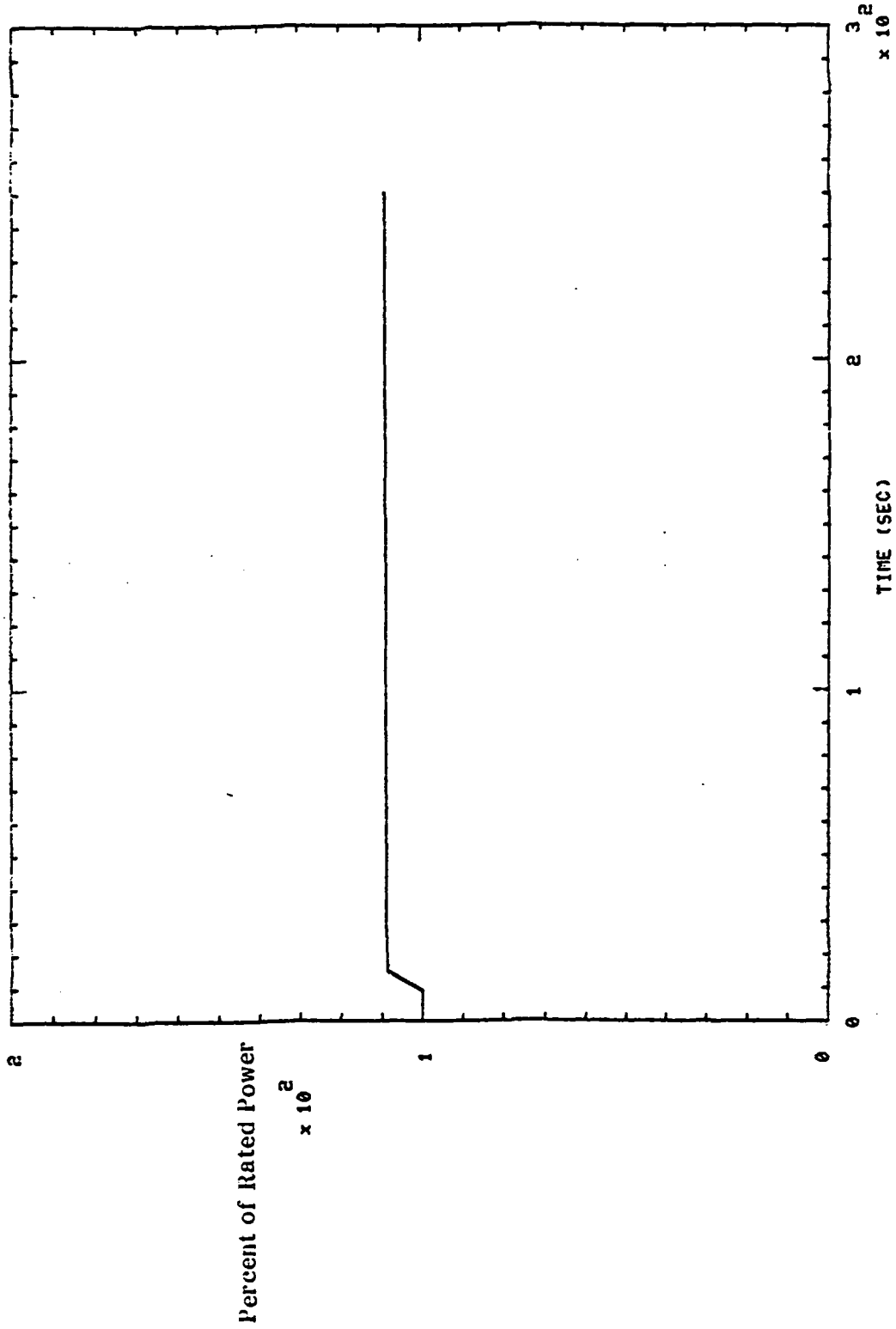


901401 THRUST (UNFILTERED )

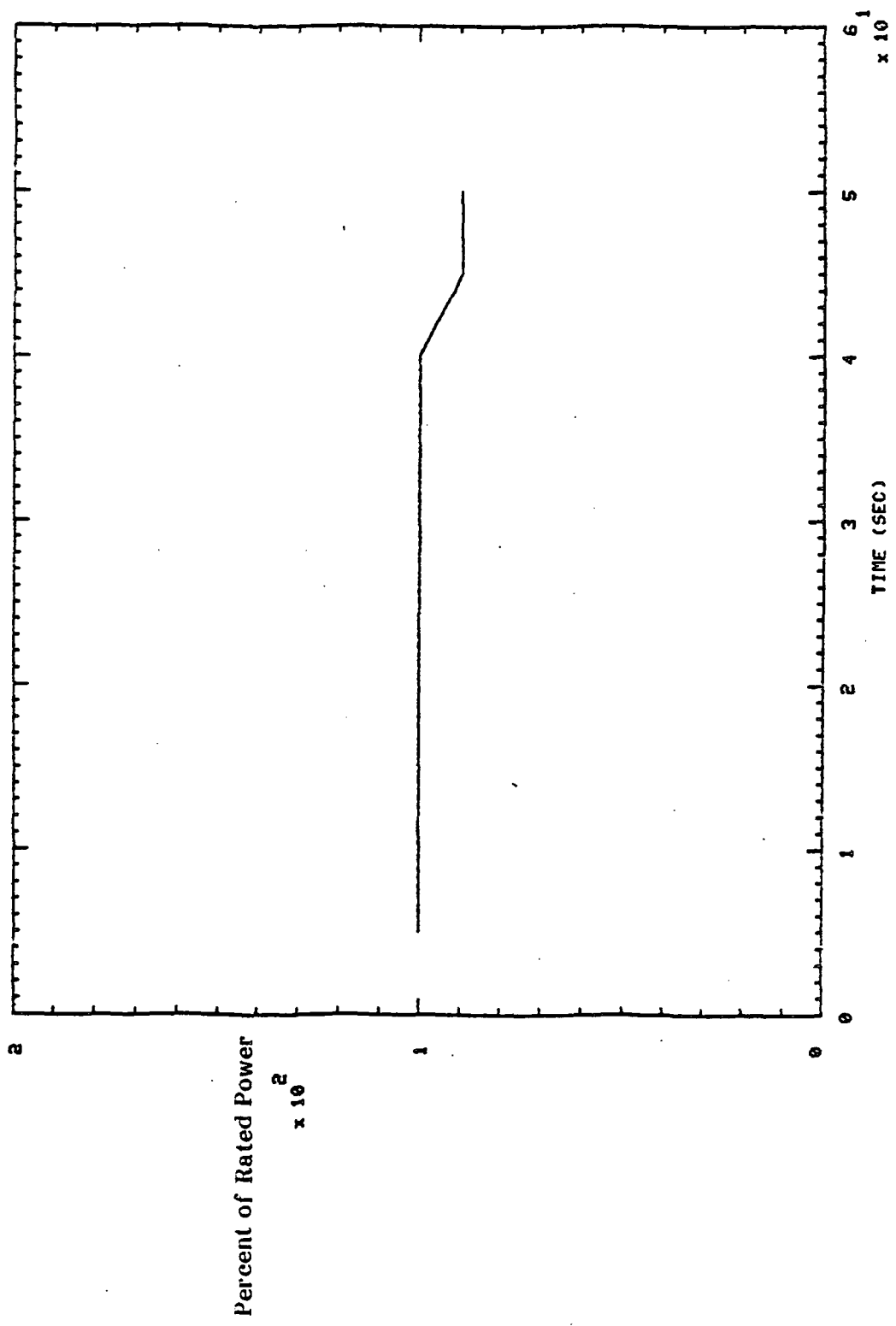




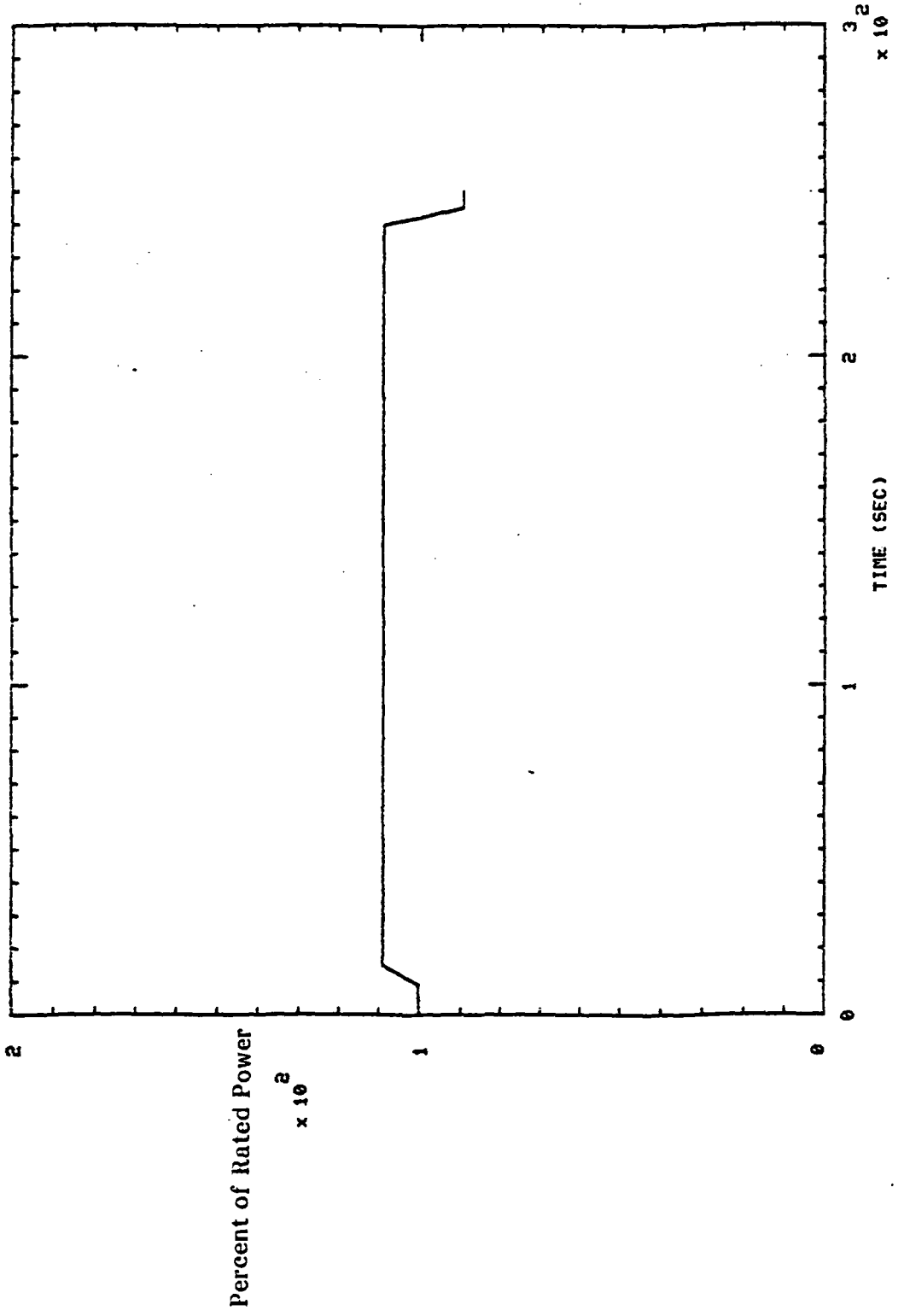
901402 THRUST (UNFILTERED )



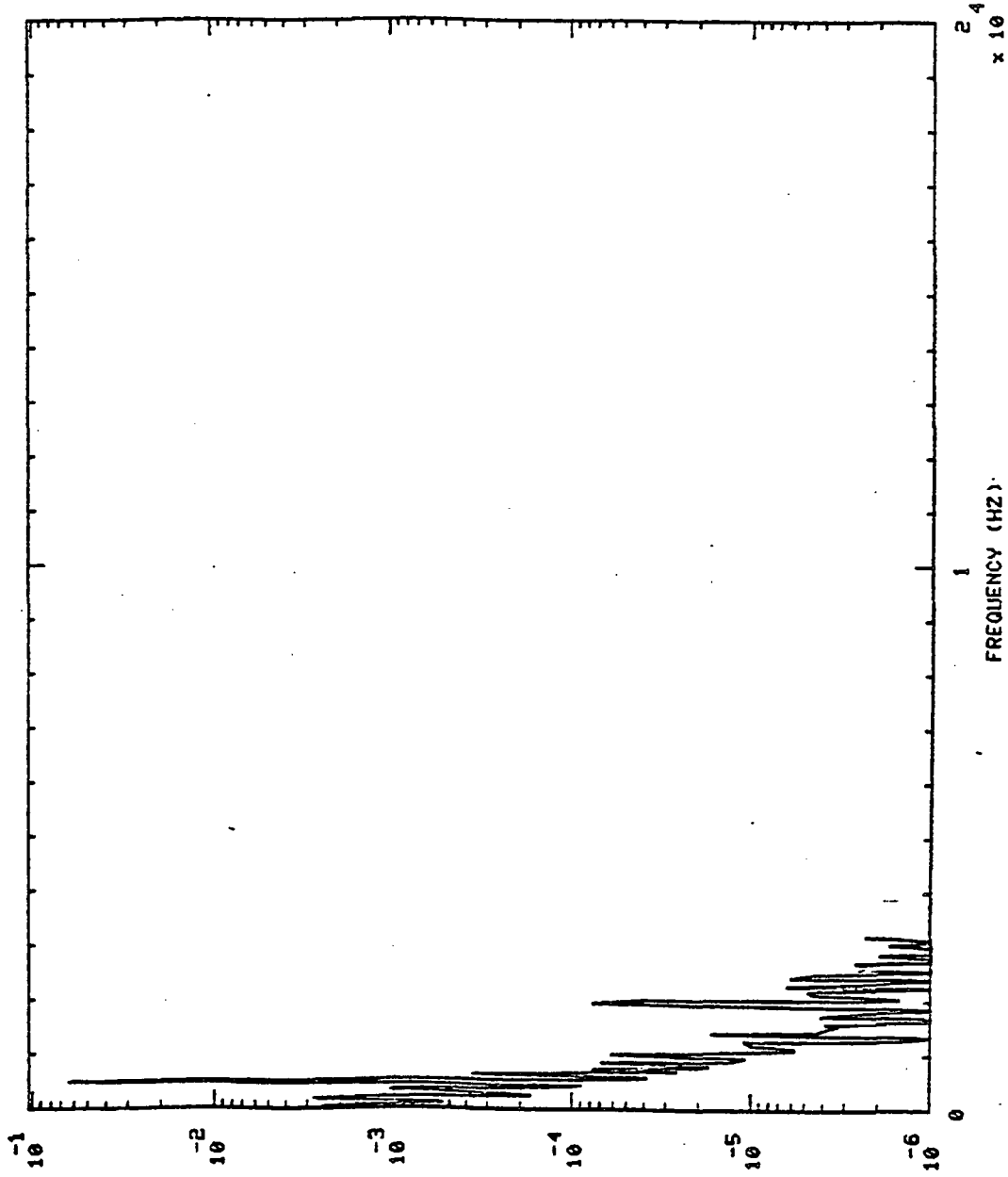
901403 THRUST (UNFILTERED )



S01404 THRUST (UNFILTERED )

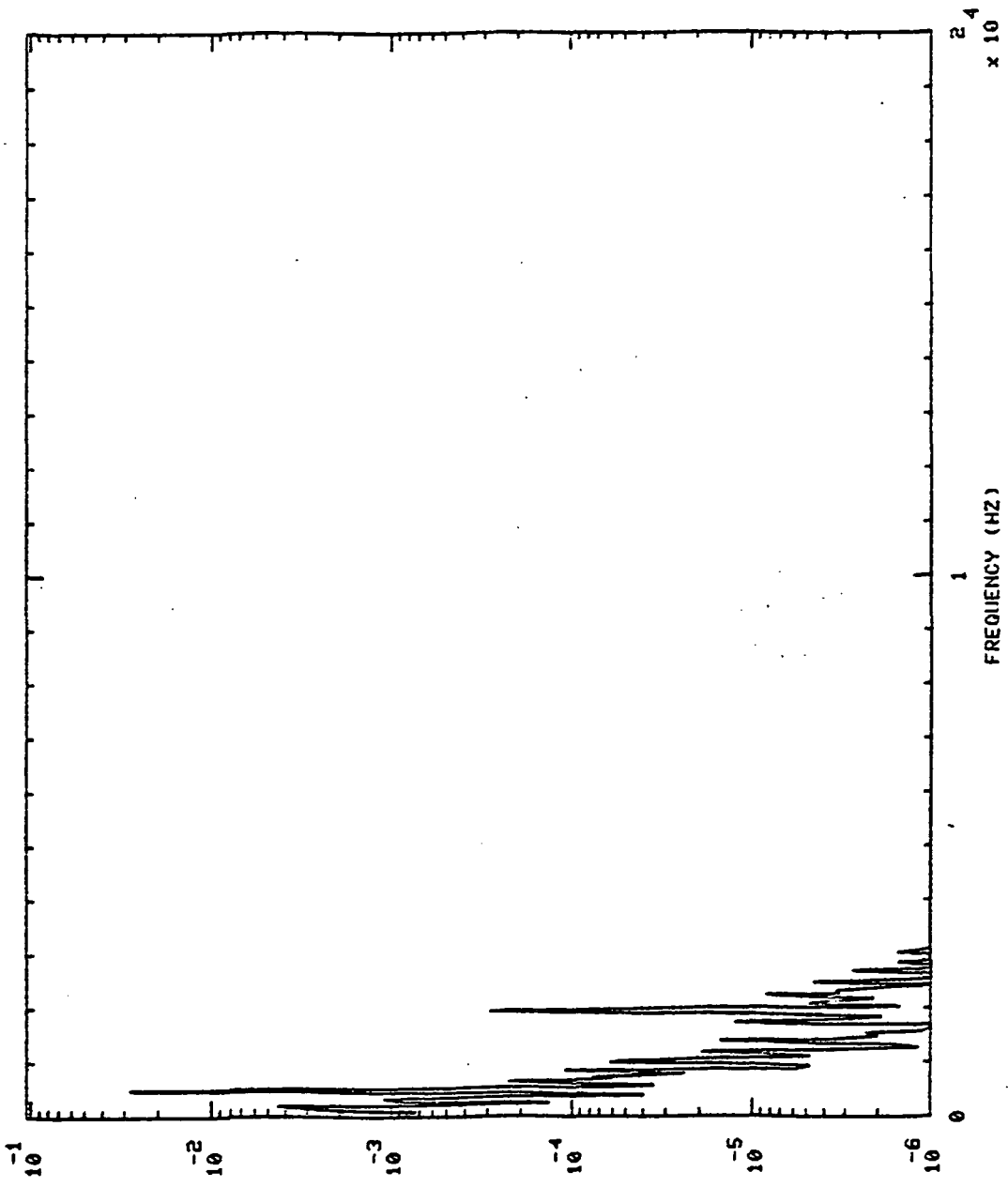


901404 HPOP BAL CAU PR2 5+ 20.0



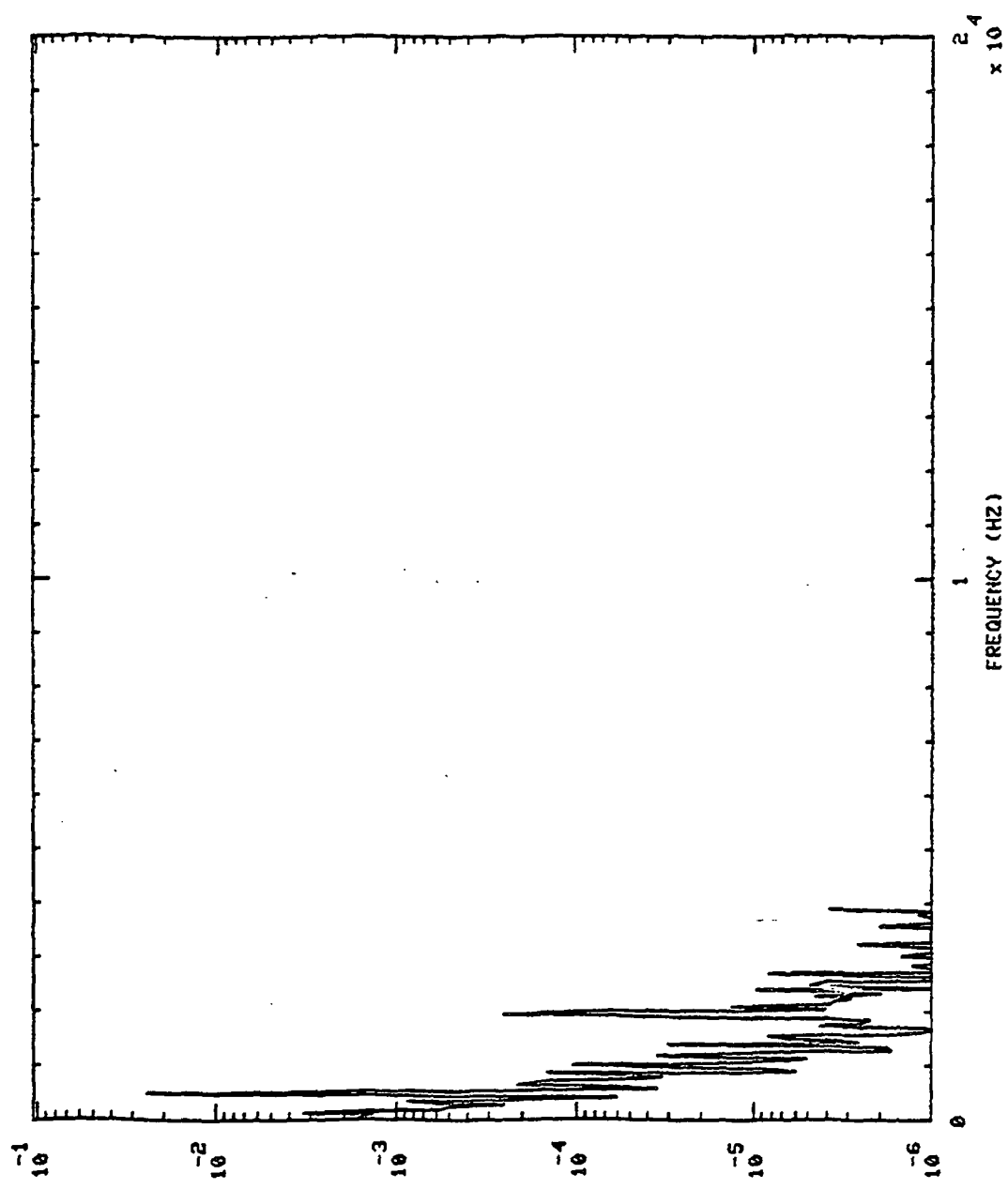
P SQ/HZ

901404 HPOP BAL CAU PR2 S+ 100.0



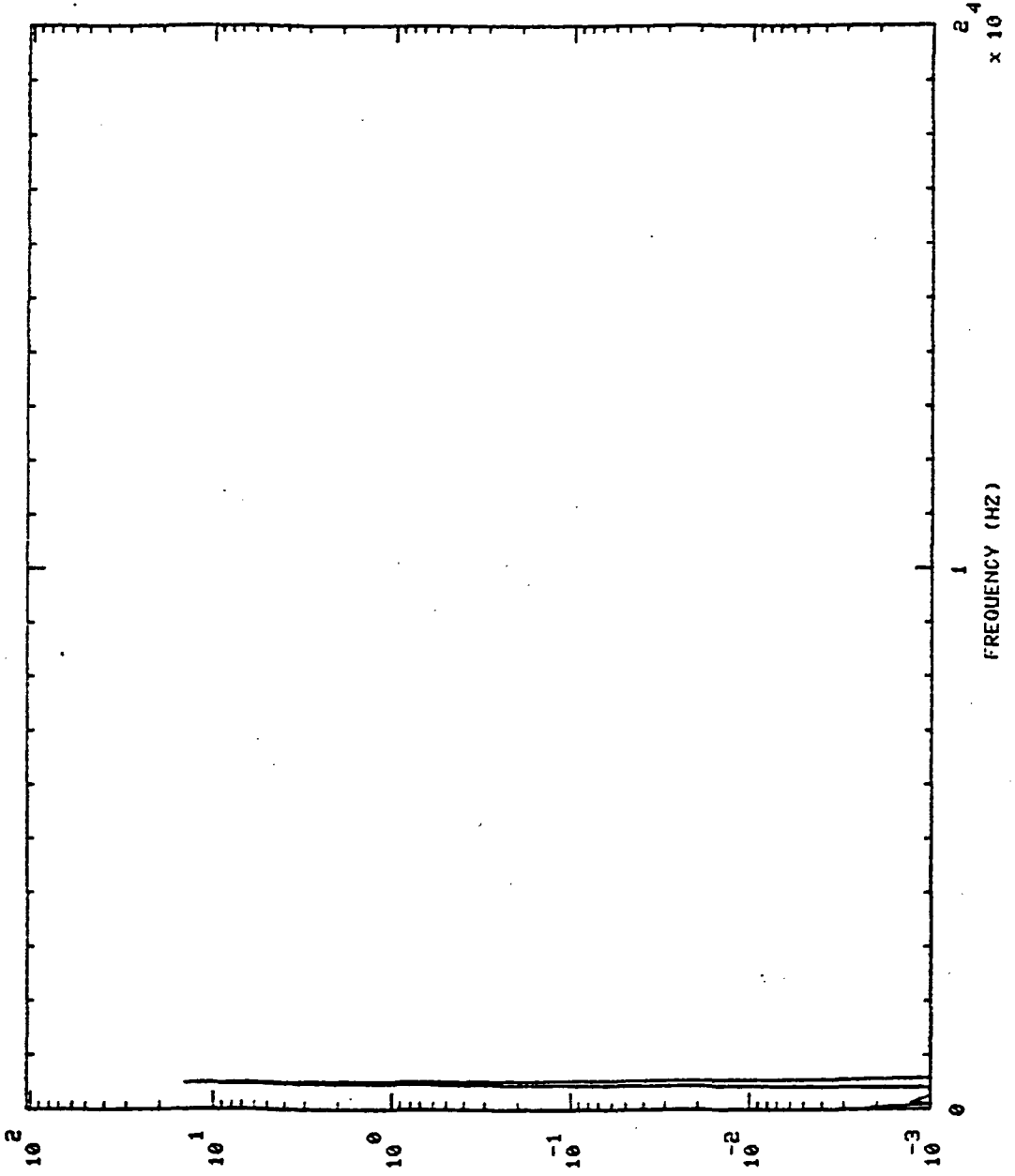
P SQ / HZ

901404 HPOP BAL CAU PR2 S+ 220.0



P SQ / HZ

901404 HPOP BAL CAU PR1 S+ 20.0



P SQ/HZ

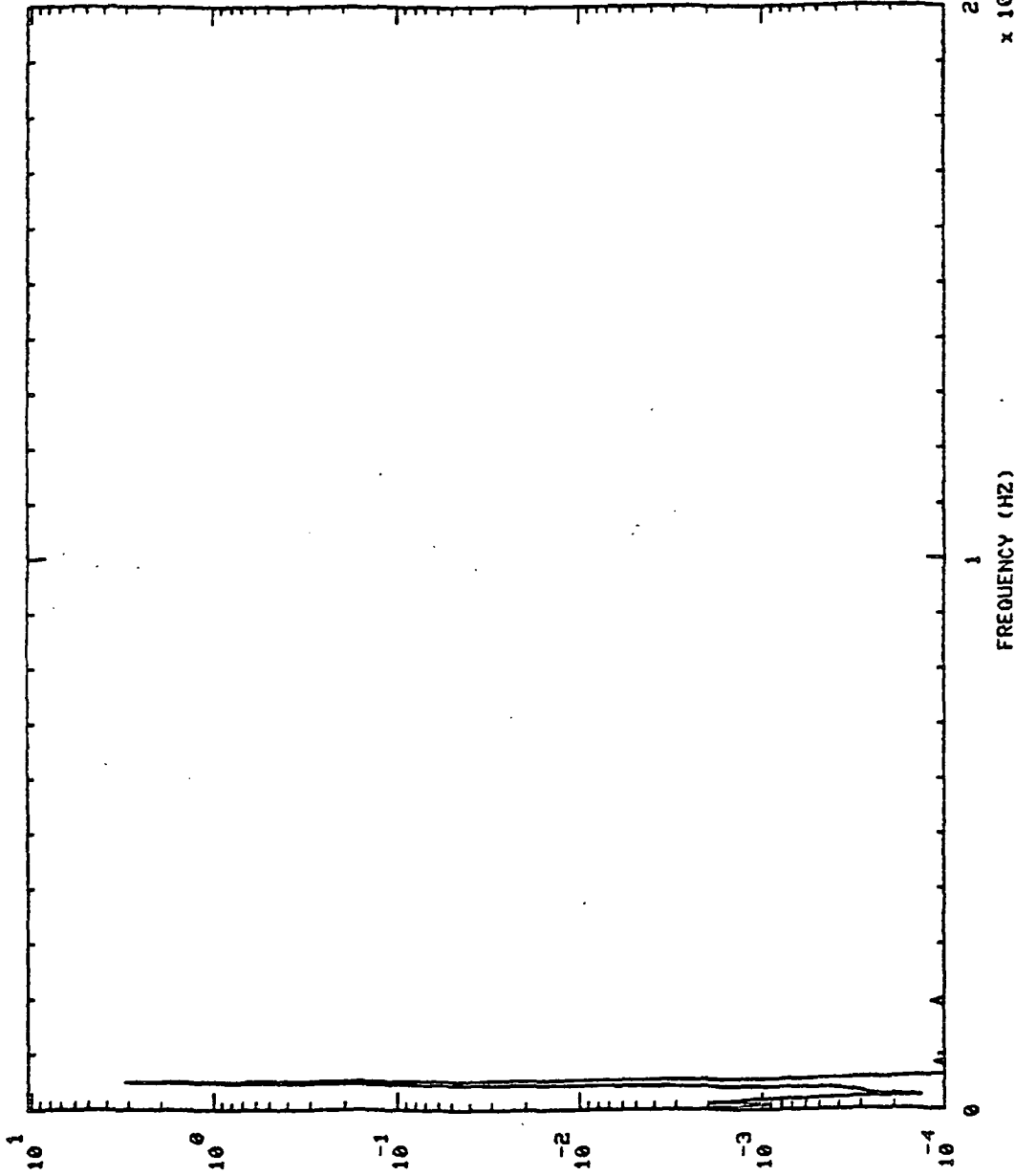
10<sup>4</sup>  
x 10

FREQUENCY (HZ)

S+ 100.0

HPOP BAL CAU PRI

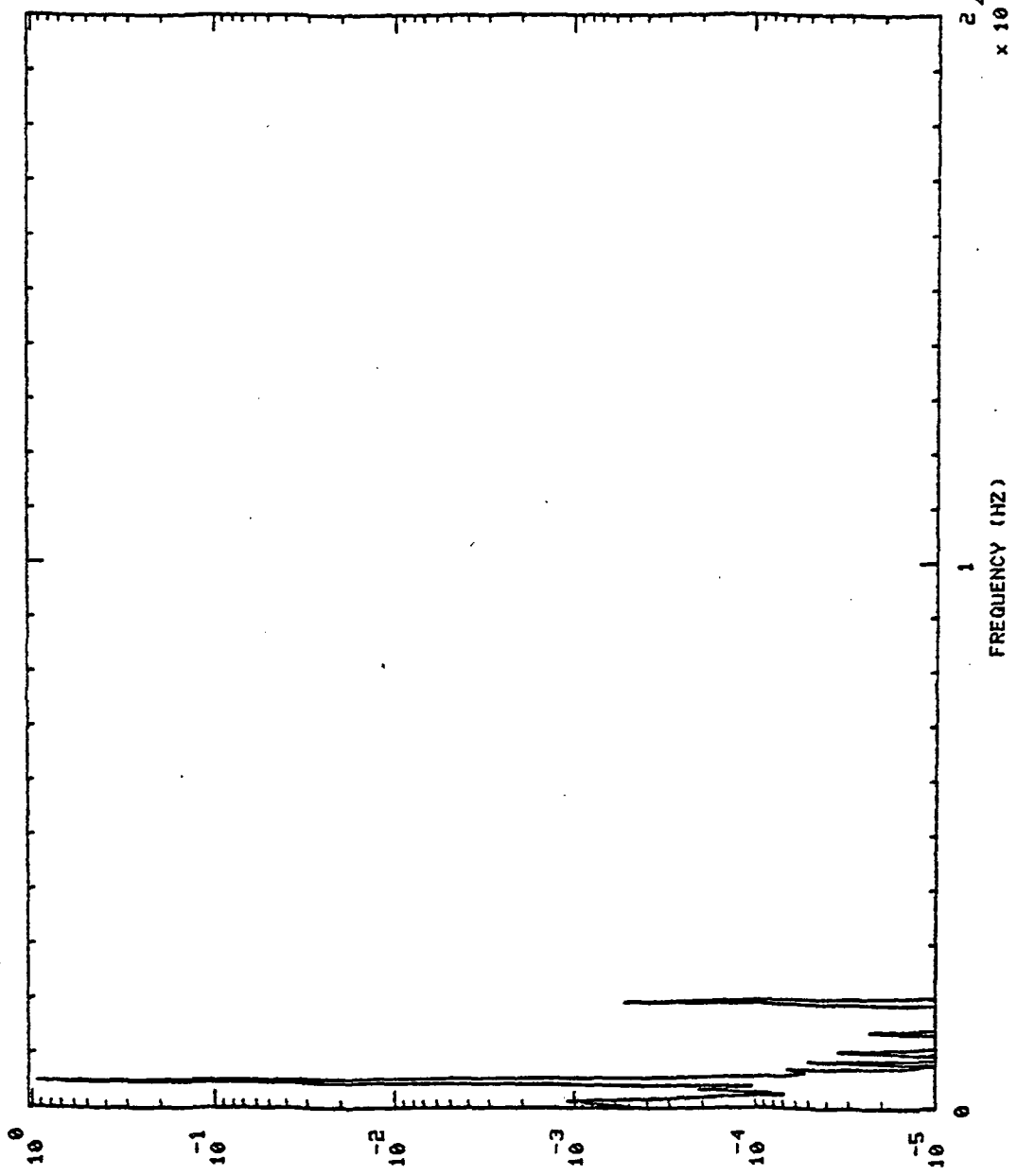
901404



P 50 \ N Z



901404 HPOP BAL CAU PR1 S+ 220.0

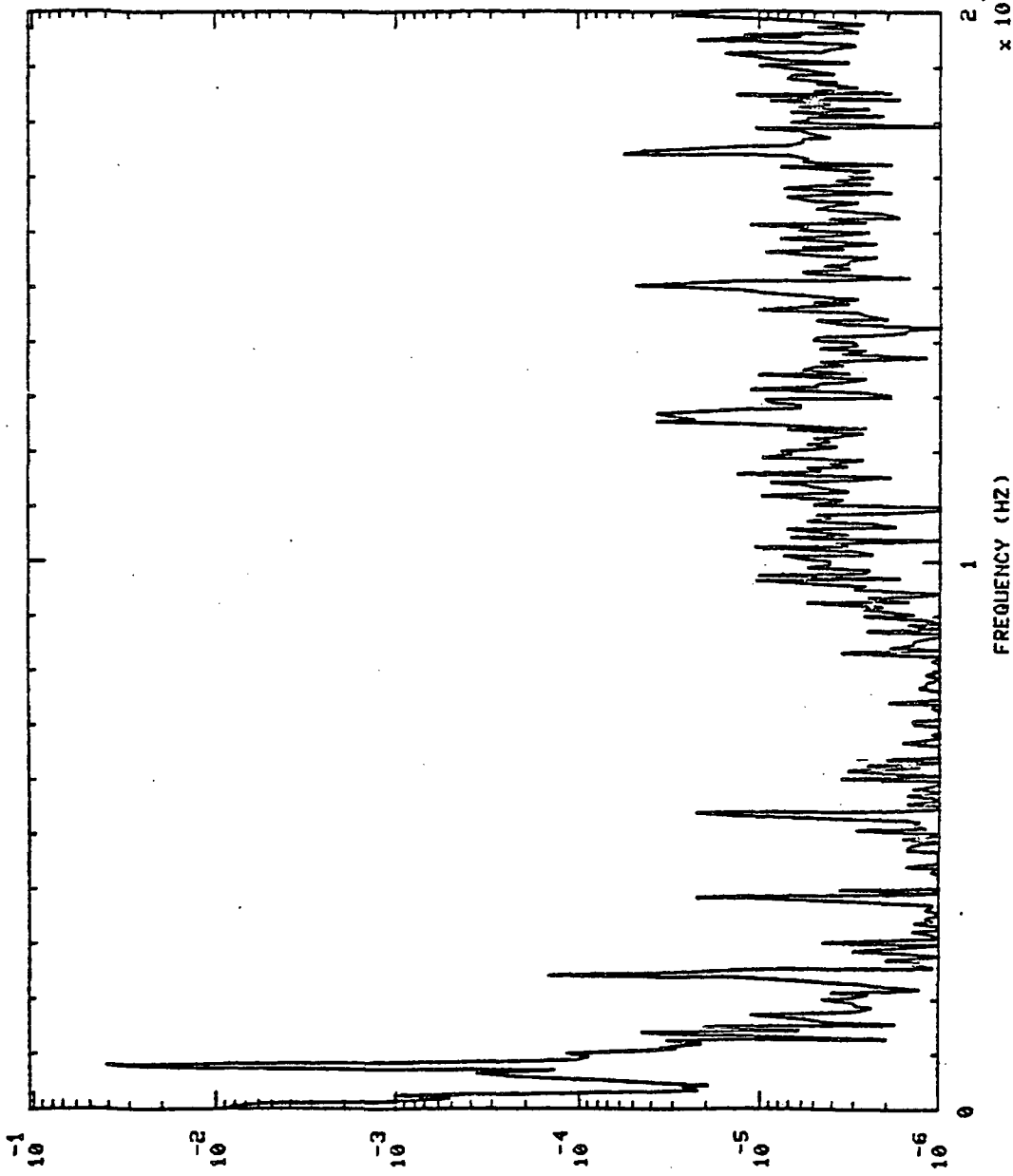


PSD (H2)

FREQUENCY (HZ) <sup>1</sup> <sup>2</sup> <sup>4</sup> x 10

St 20.0

901404 OPB PC PR



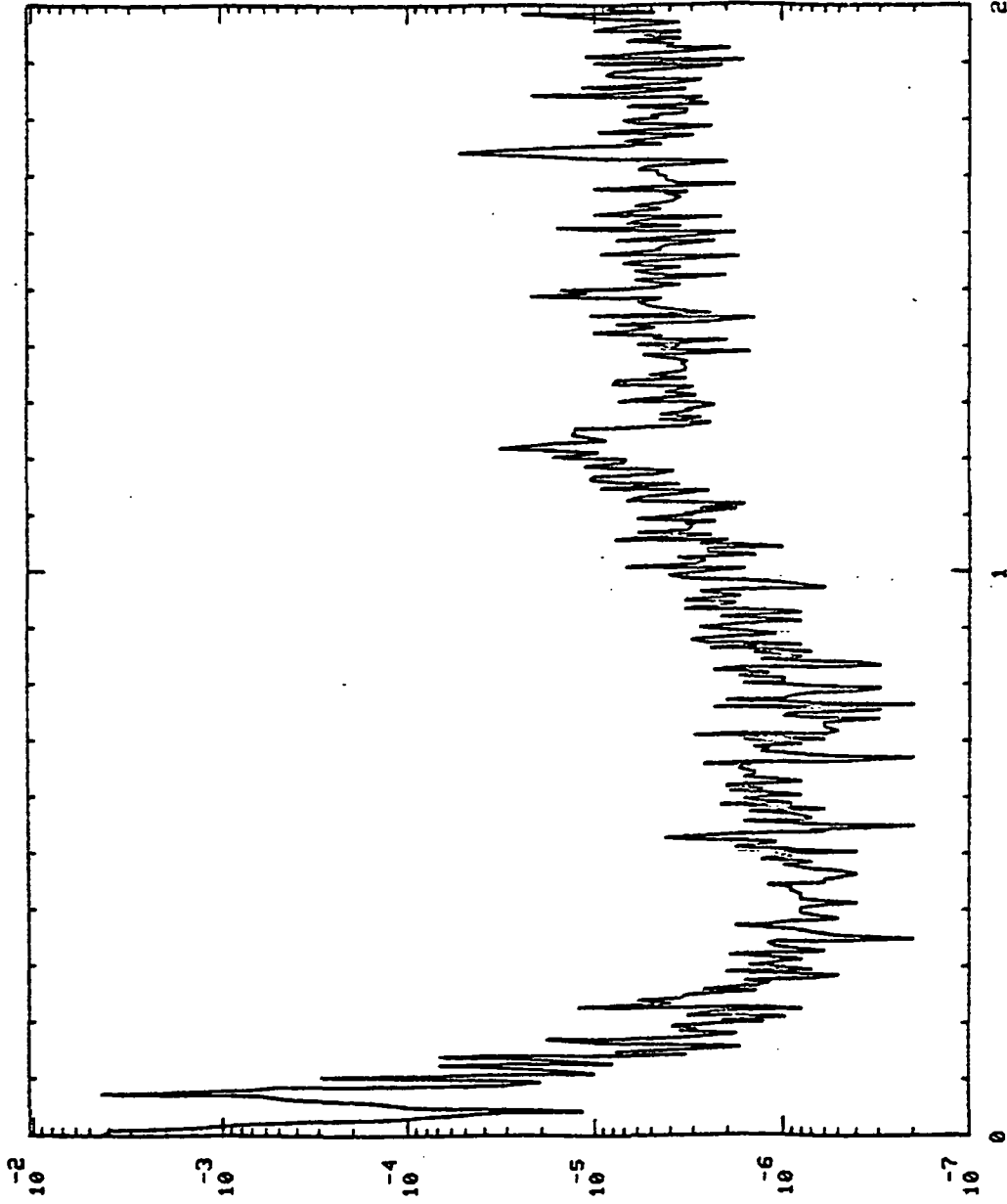
P S D / H Z

$2.4 \times 10^4$

1  
FREQUENCY (HZ)

0

981404 OPB PC PR S+ 100.0



PSD / HZ

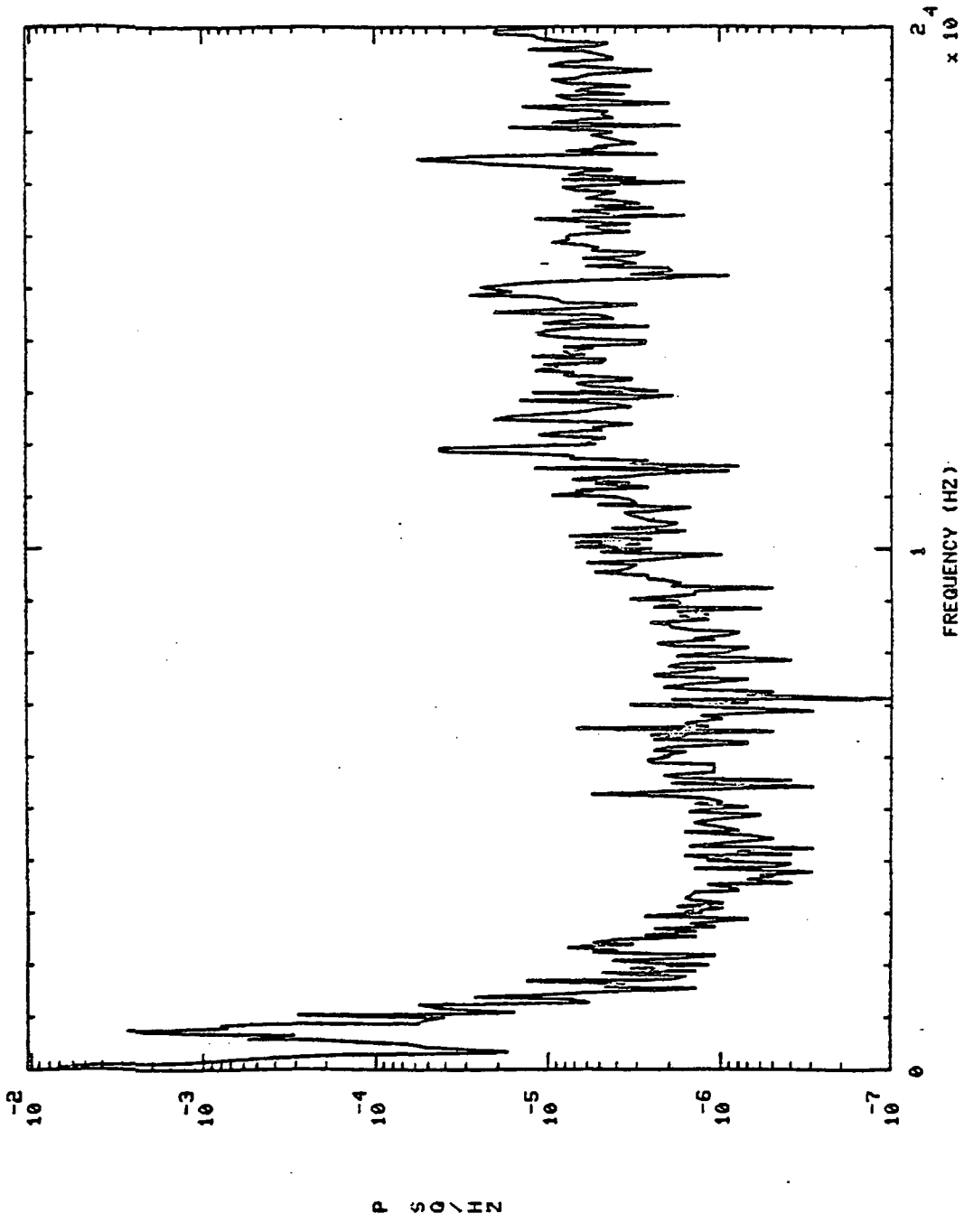
2.4  
 $\times 10^4$

1  
FREQUENCY (HZ)

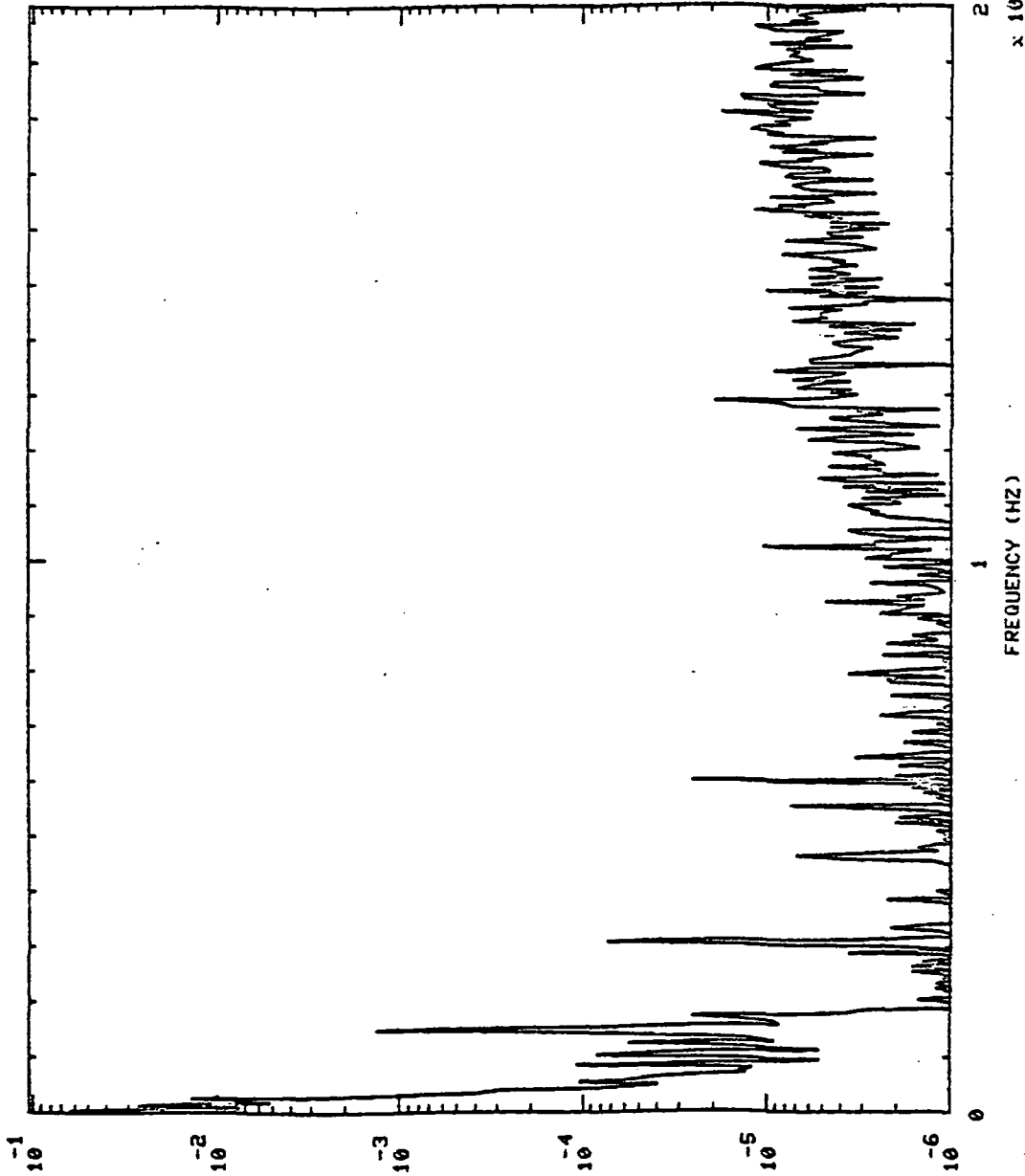
0

S+ 220.0

901404 OPB PC PR



901404 HPFF BAL CAU PR S+ 20.0



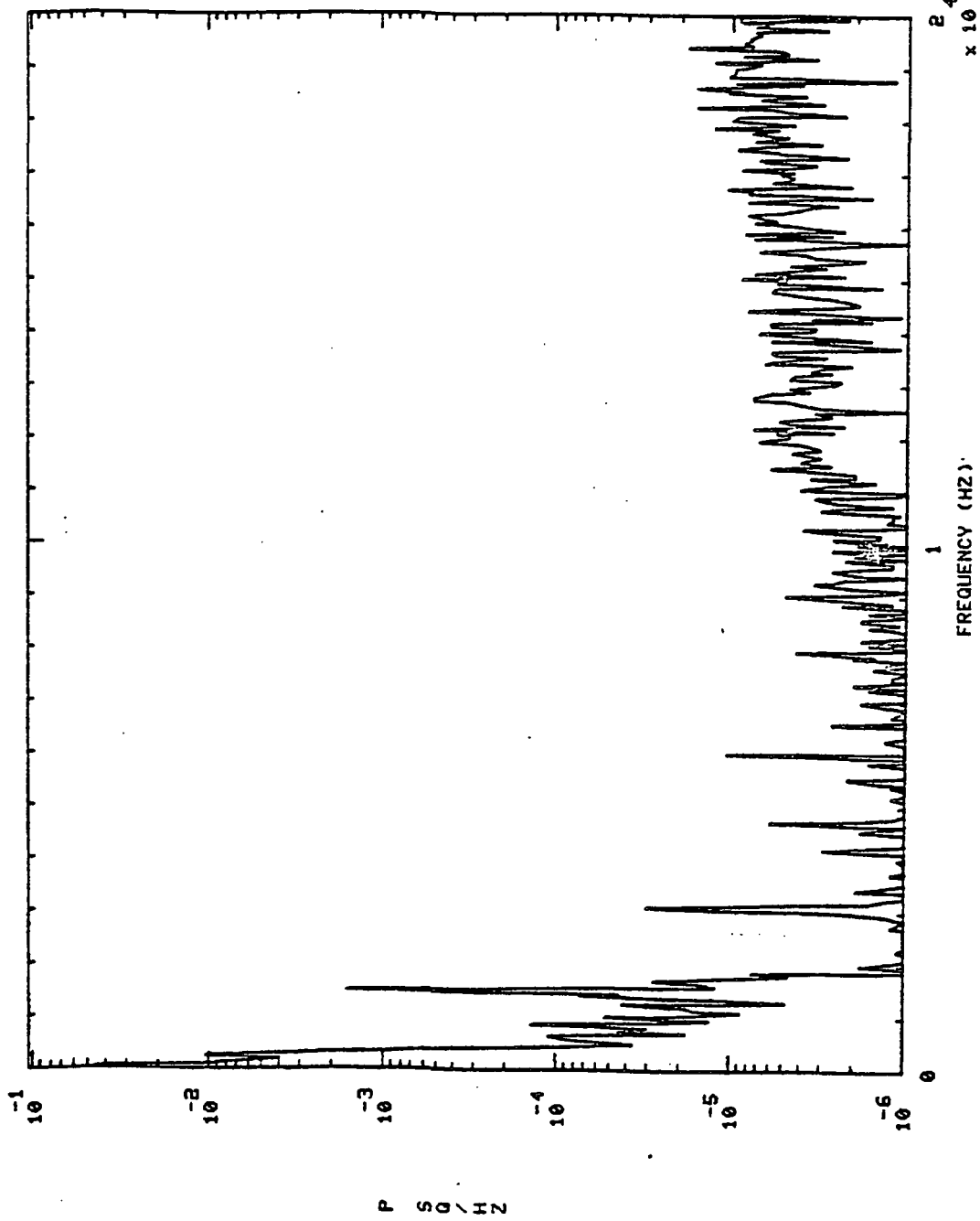
P S D / H Z

C-5

S+ 100.0

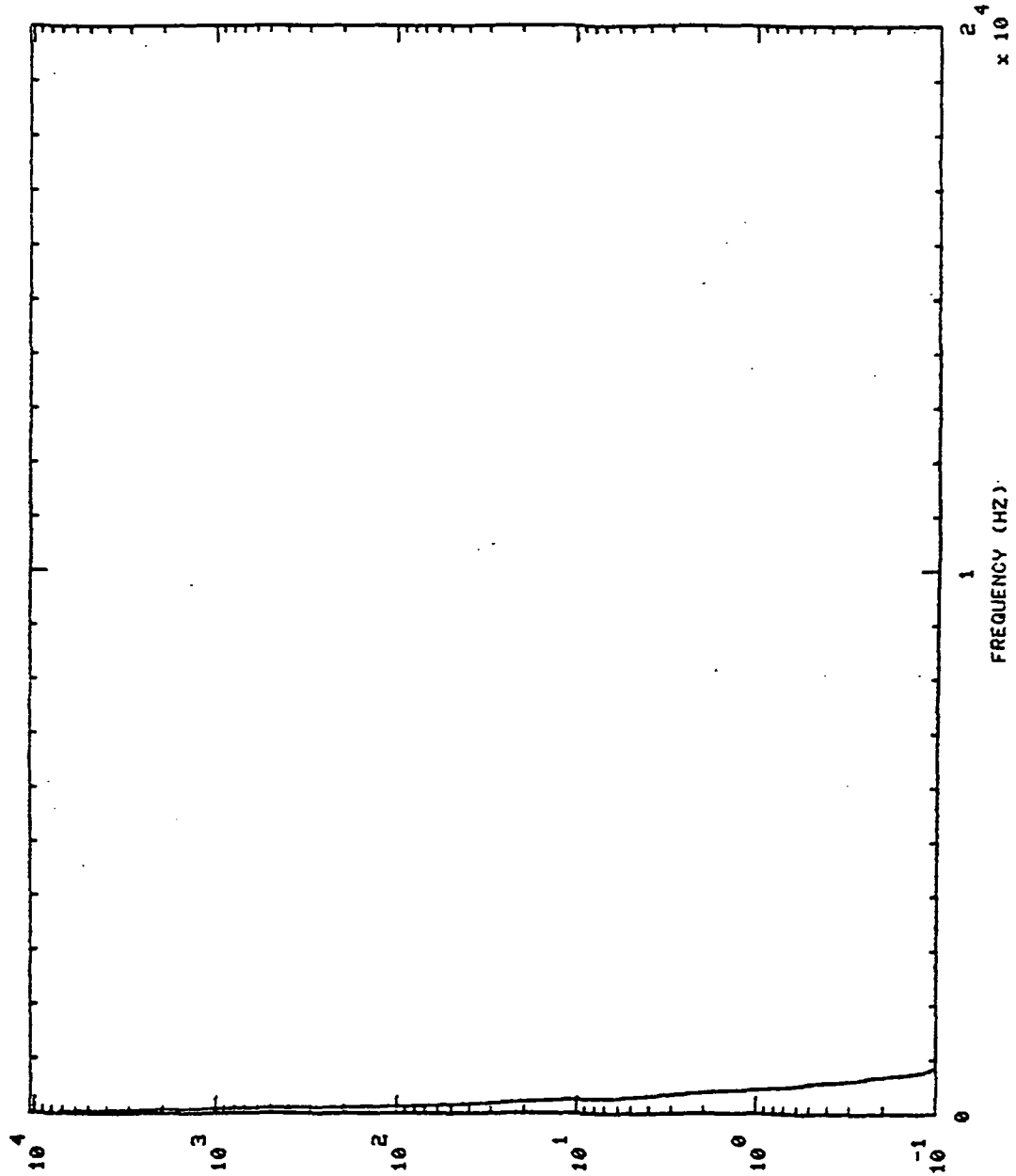
HPFP BAL CAU PR

901404



S+ 220.0

901404 HPFP BAL CAU PR

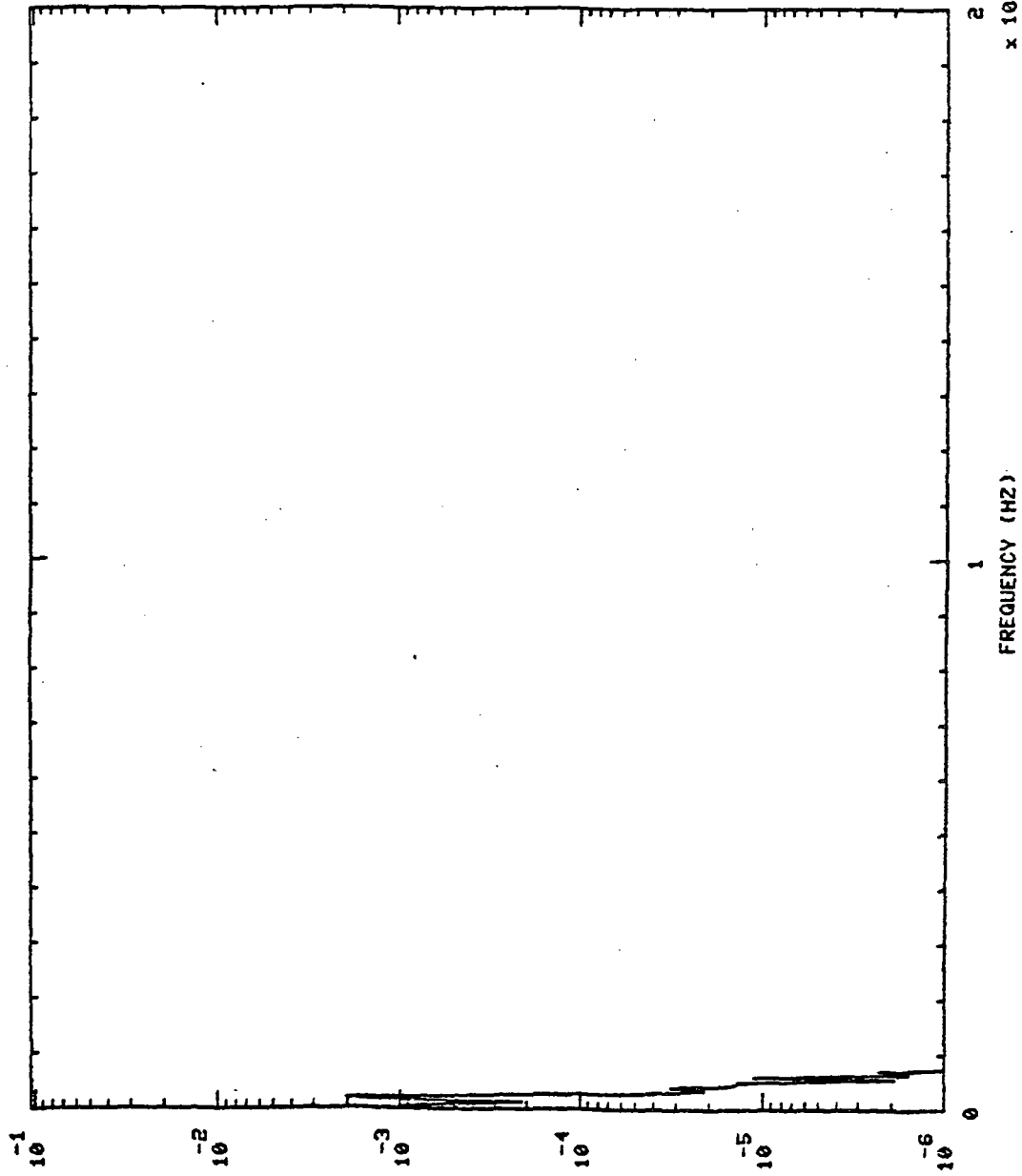


PSD / HZ

FREQUENCY (HZ)

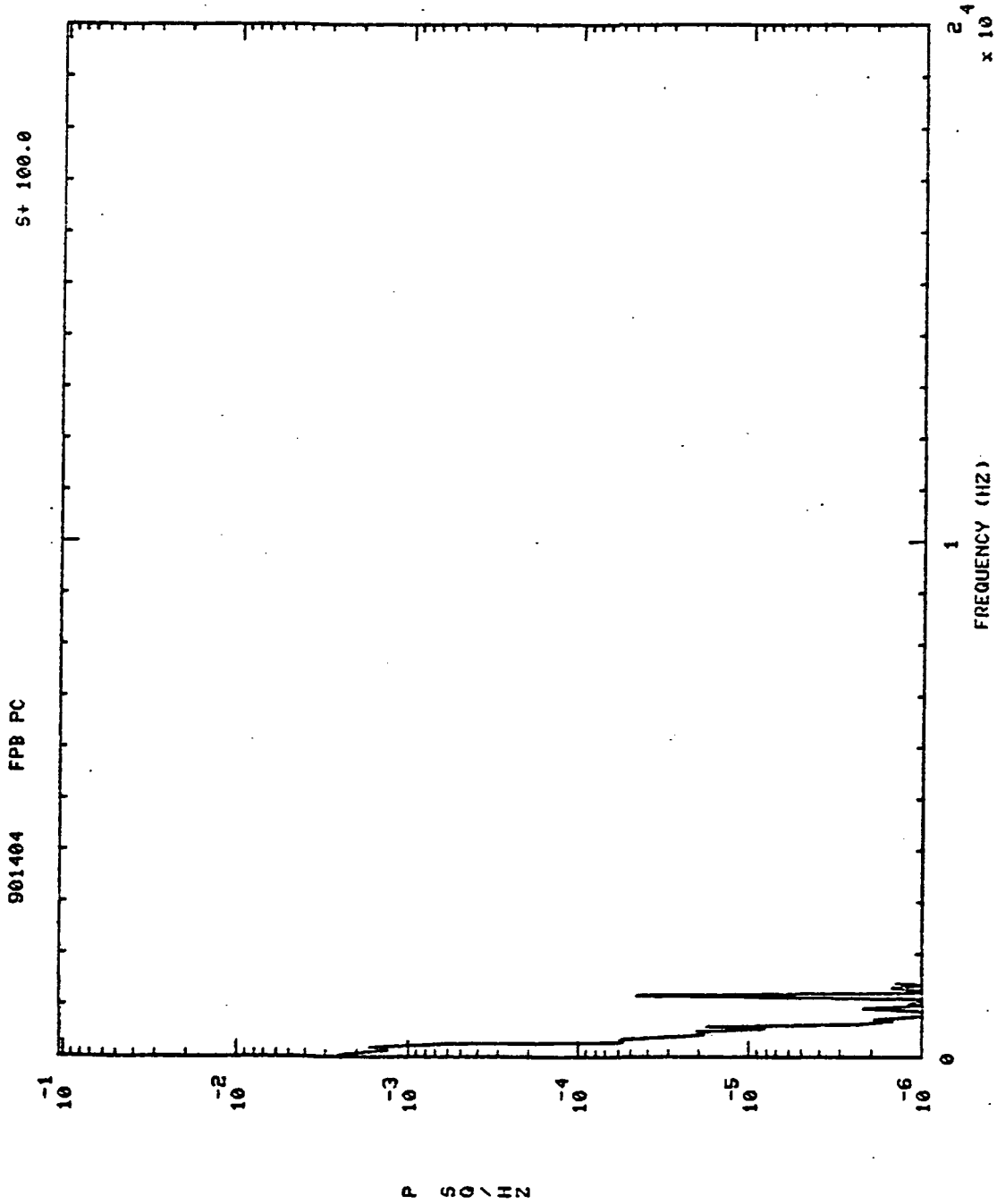
S+ 20.0

901404 FFB PC



P S D \ IN

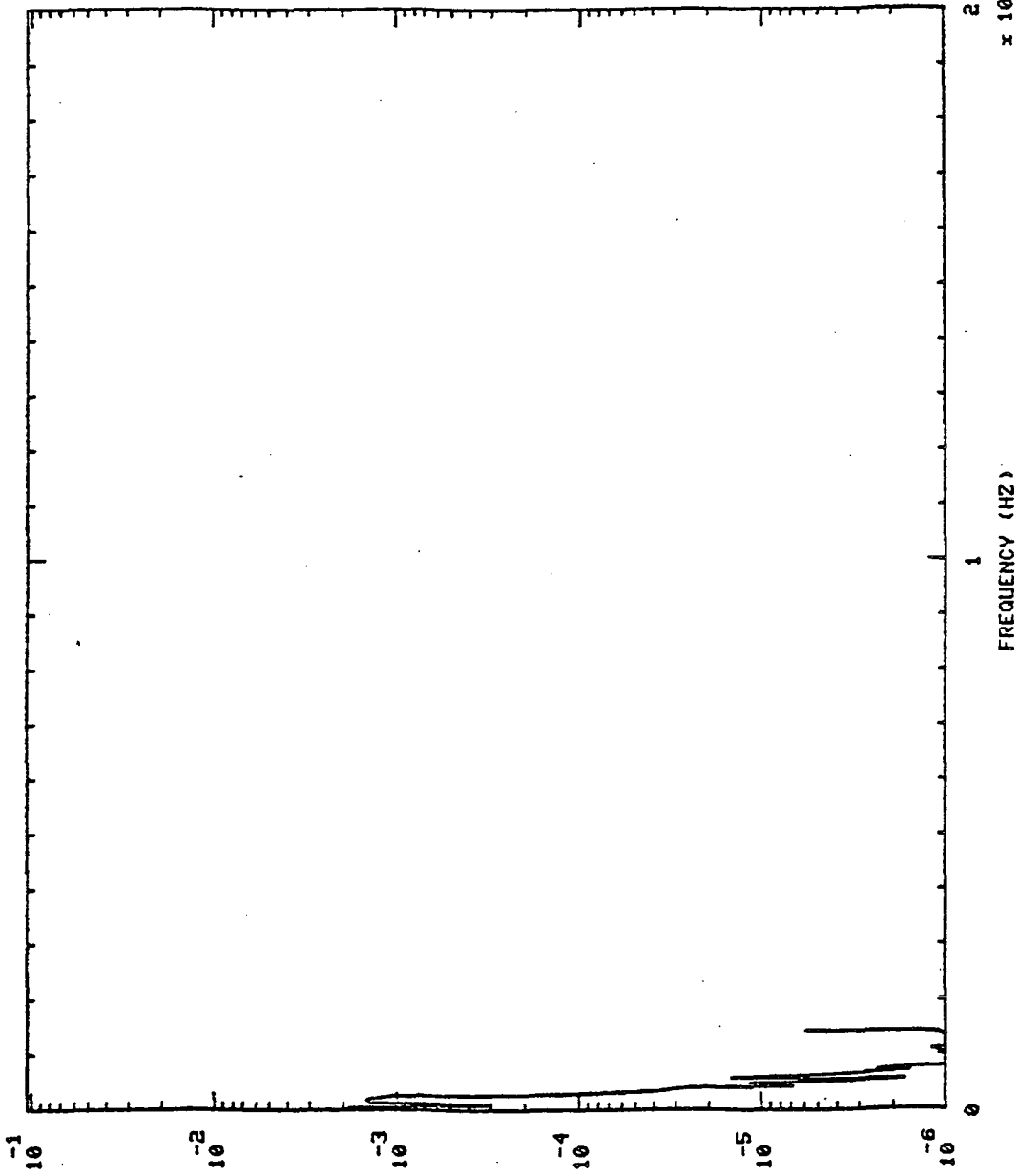




S+ 220.0

FPB PC

901404

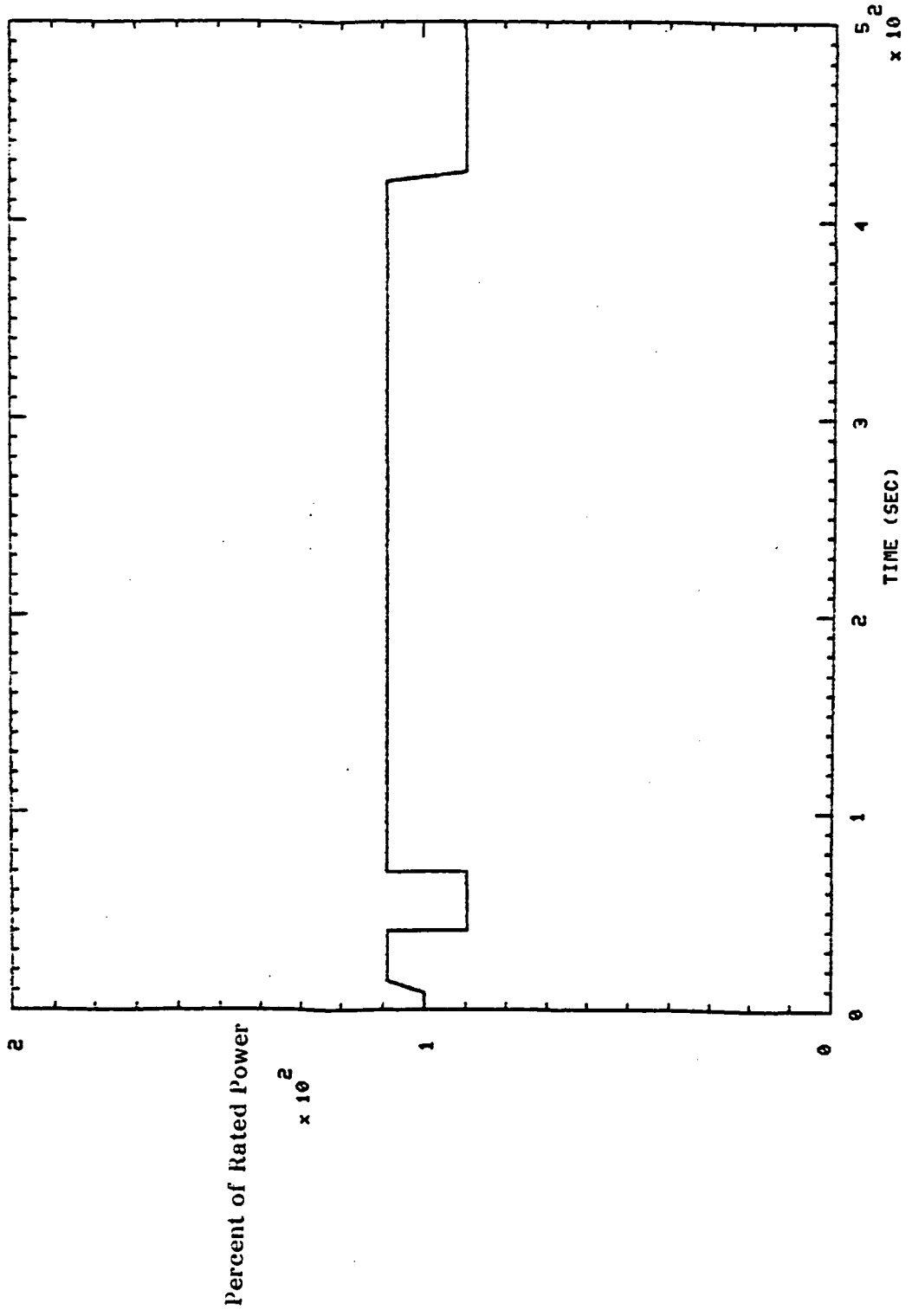


P S D / H Z

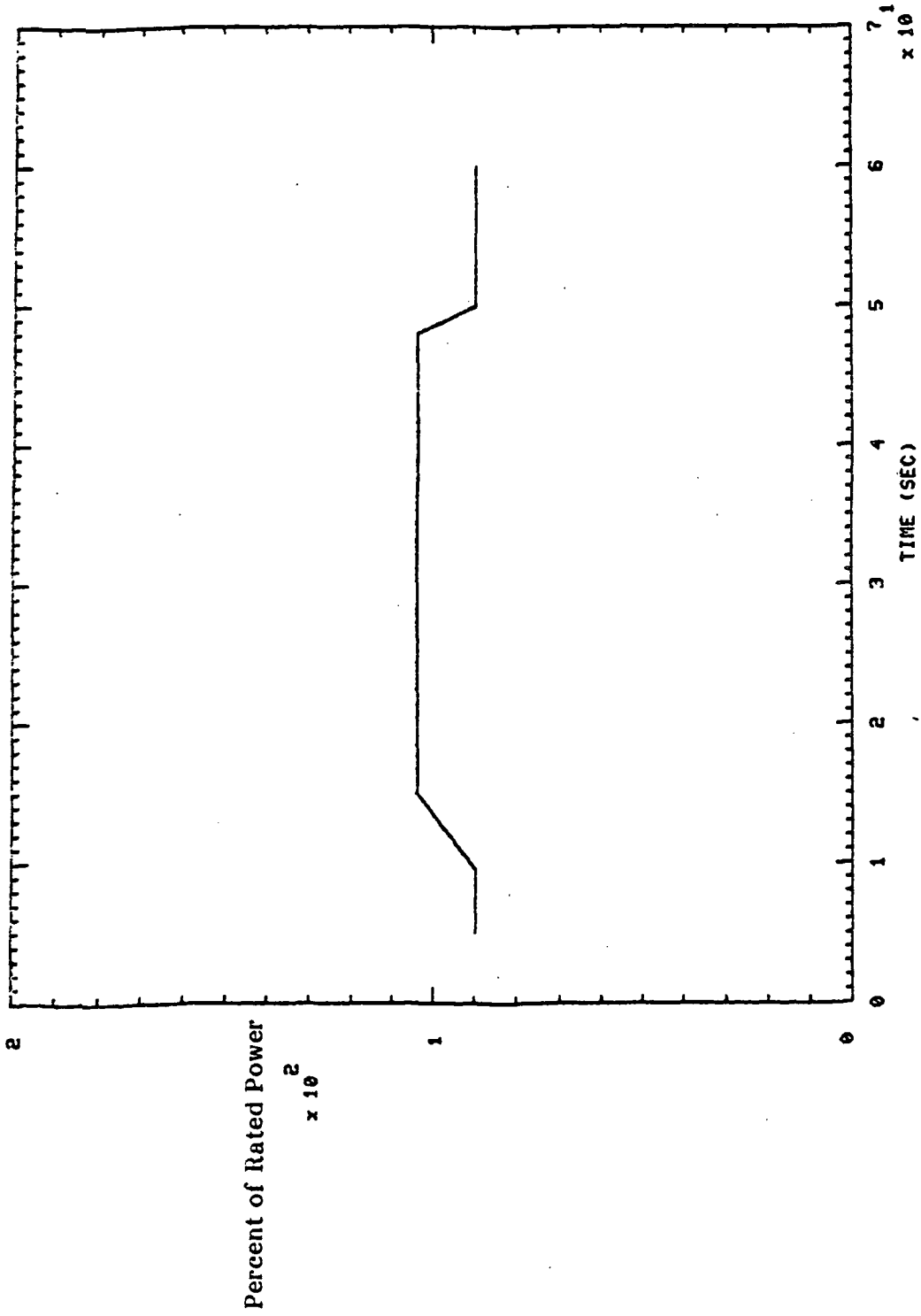
FREQUENCY (HZ)

$2.4 \times 10^4$

901425 THRUST (UNFILTERED )

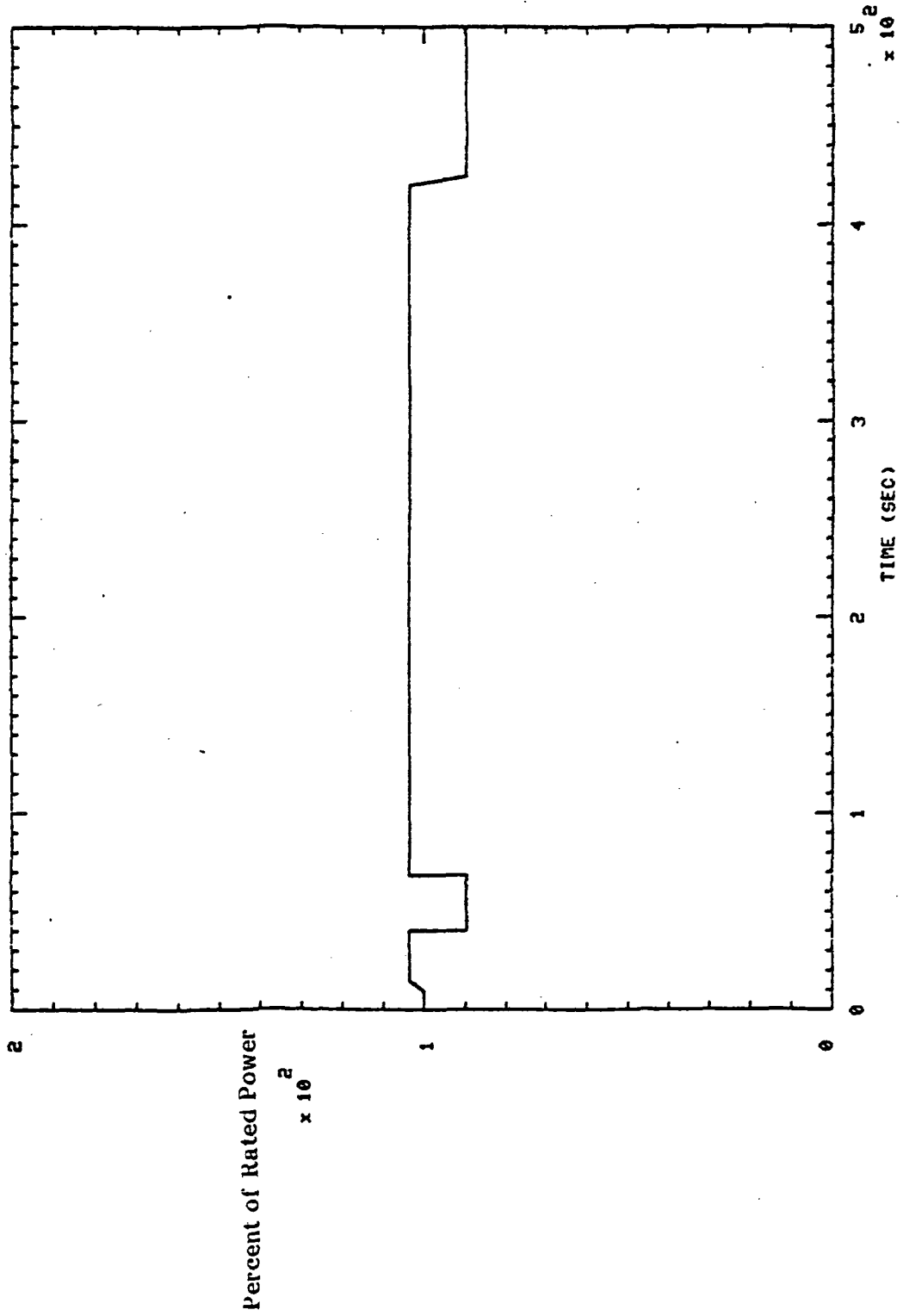


901406 THRUST (UNFILTERED )

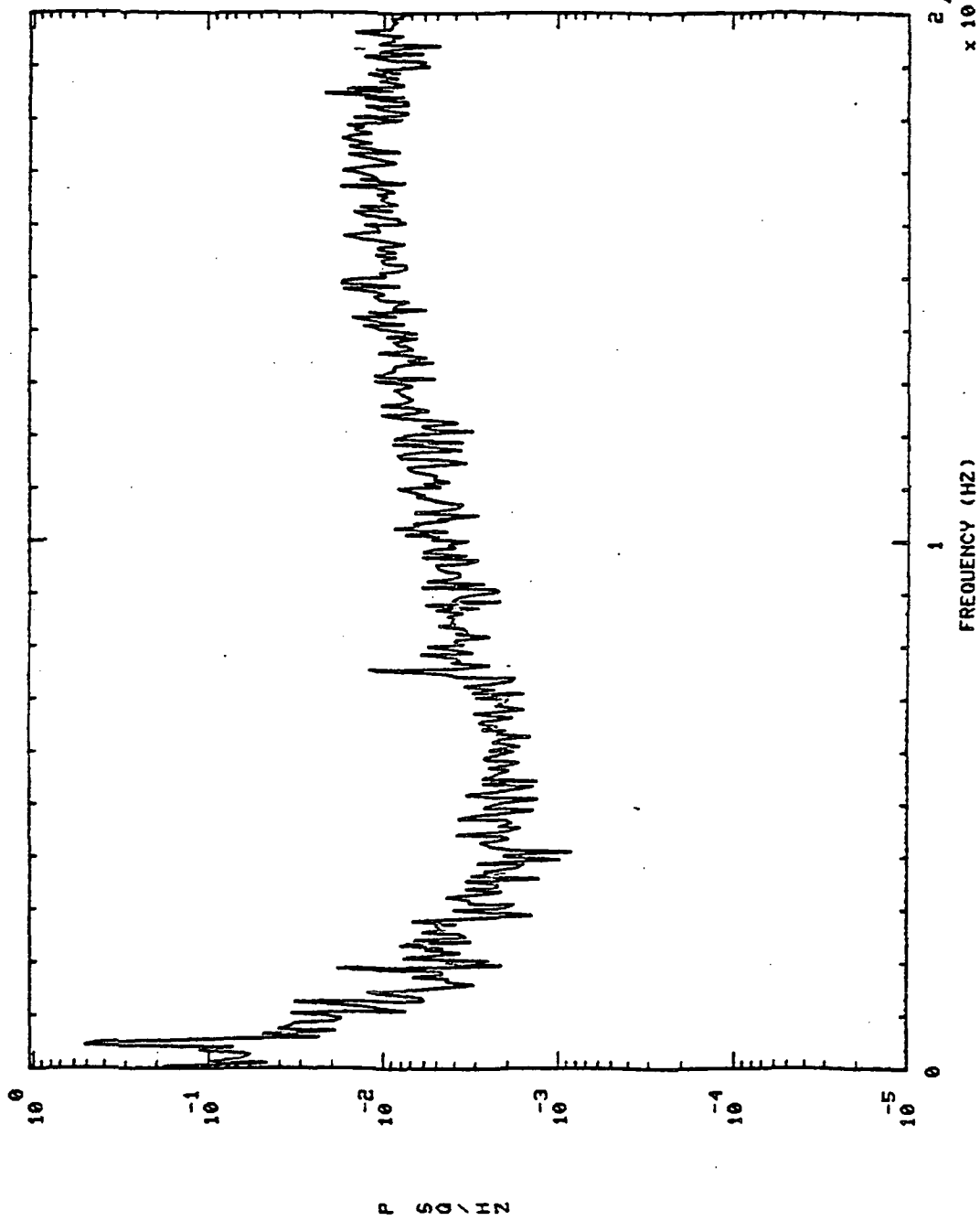


901407 THRUST (UNFILTERED)

901407 THRUST

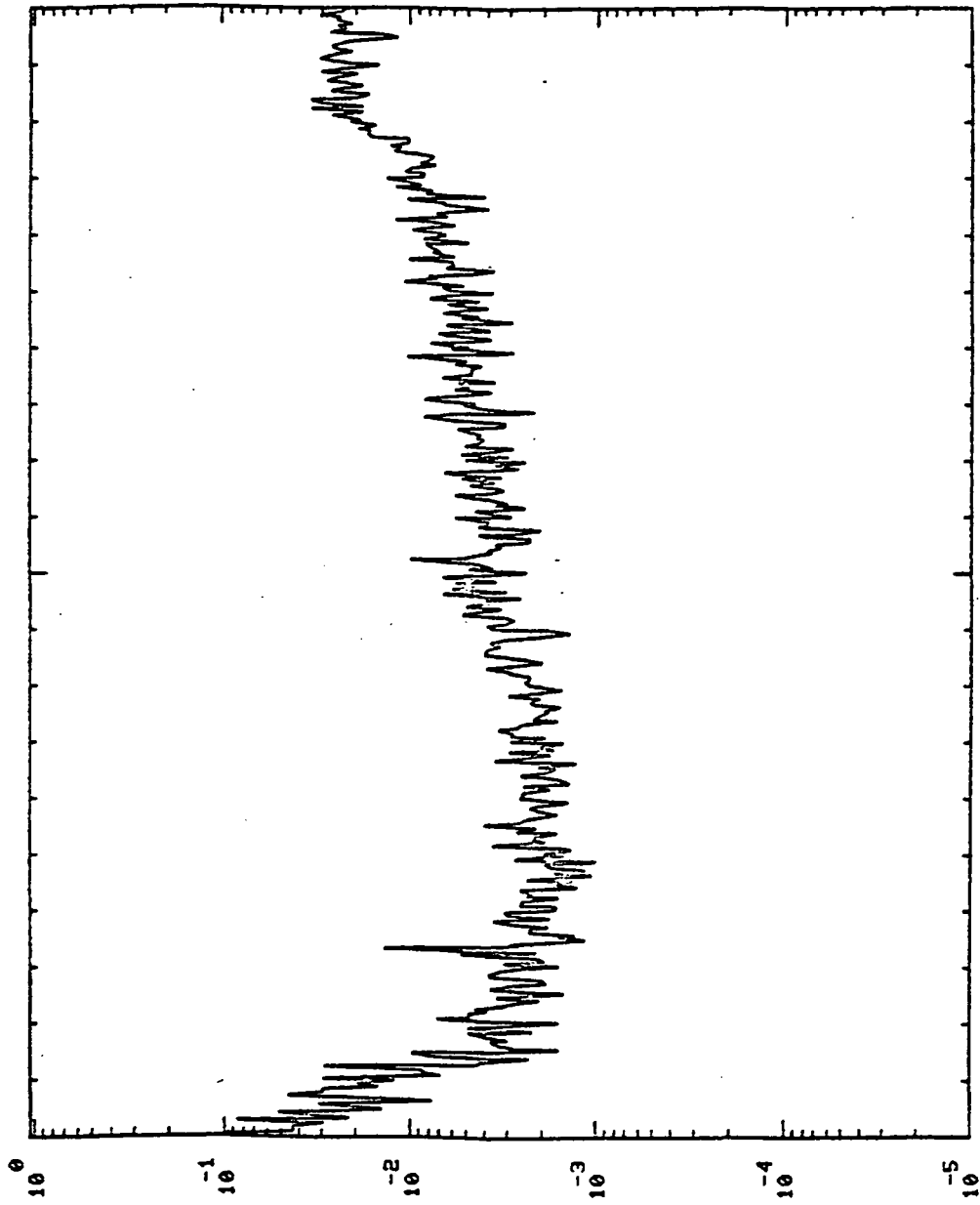


901407 HPOP BAL CAU PR2 5+ 20.0



S+ 45.0

901407 HPOP BAL CAU PR2

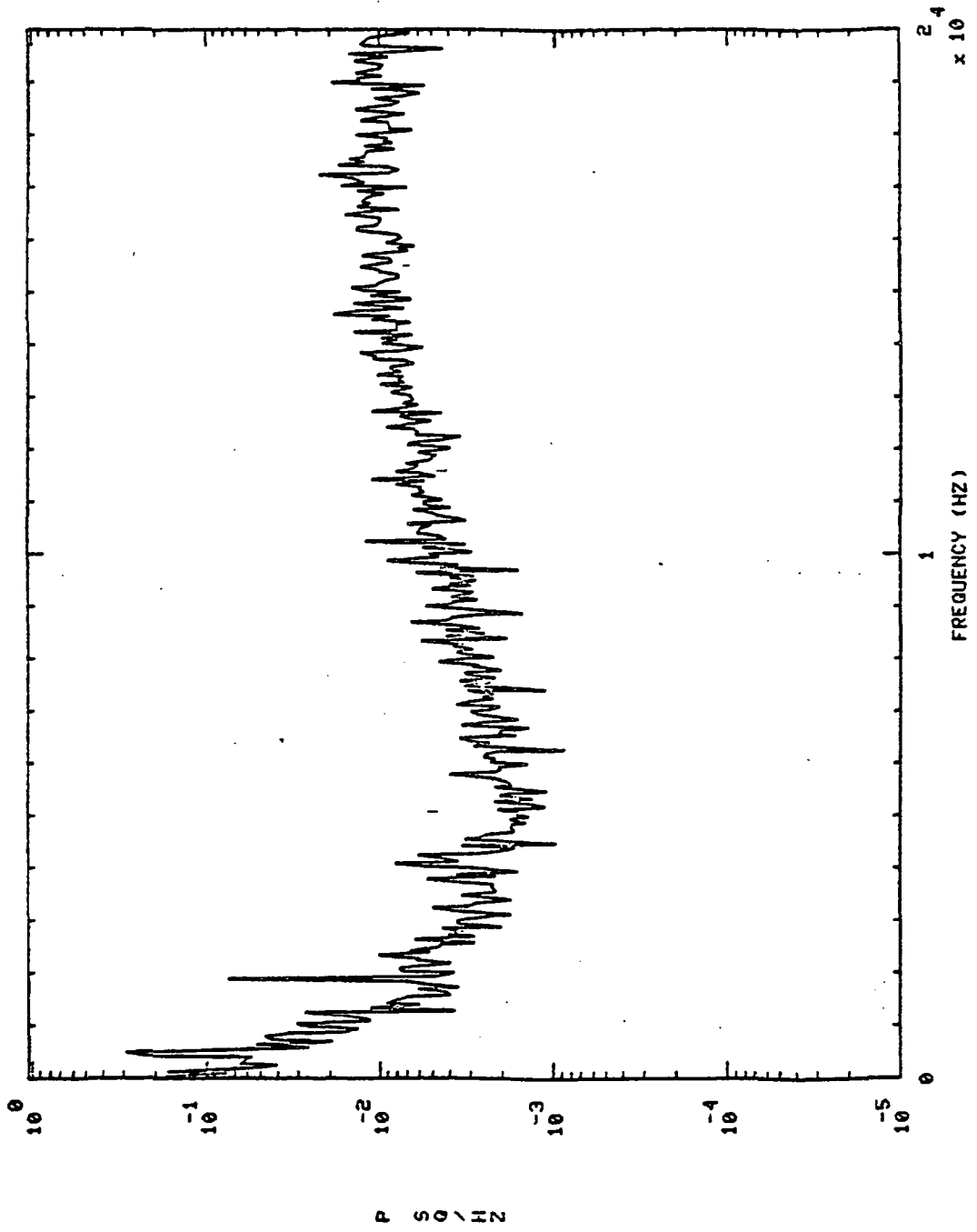


P S D \ / H Z

2.4  
x 10<sup>4</sup>

1  
FREQUENCY (HZ)

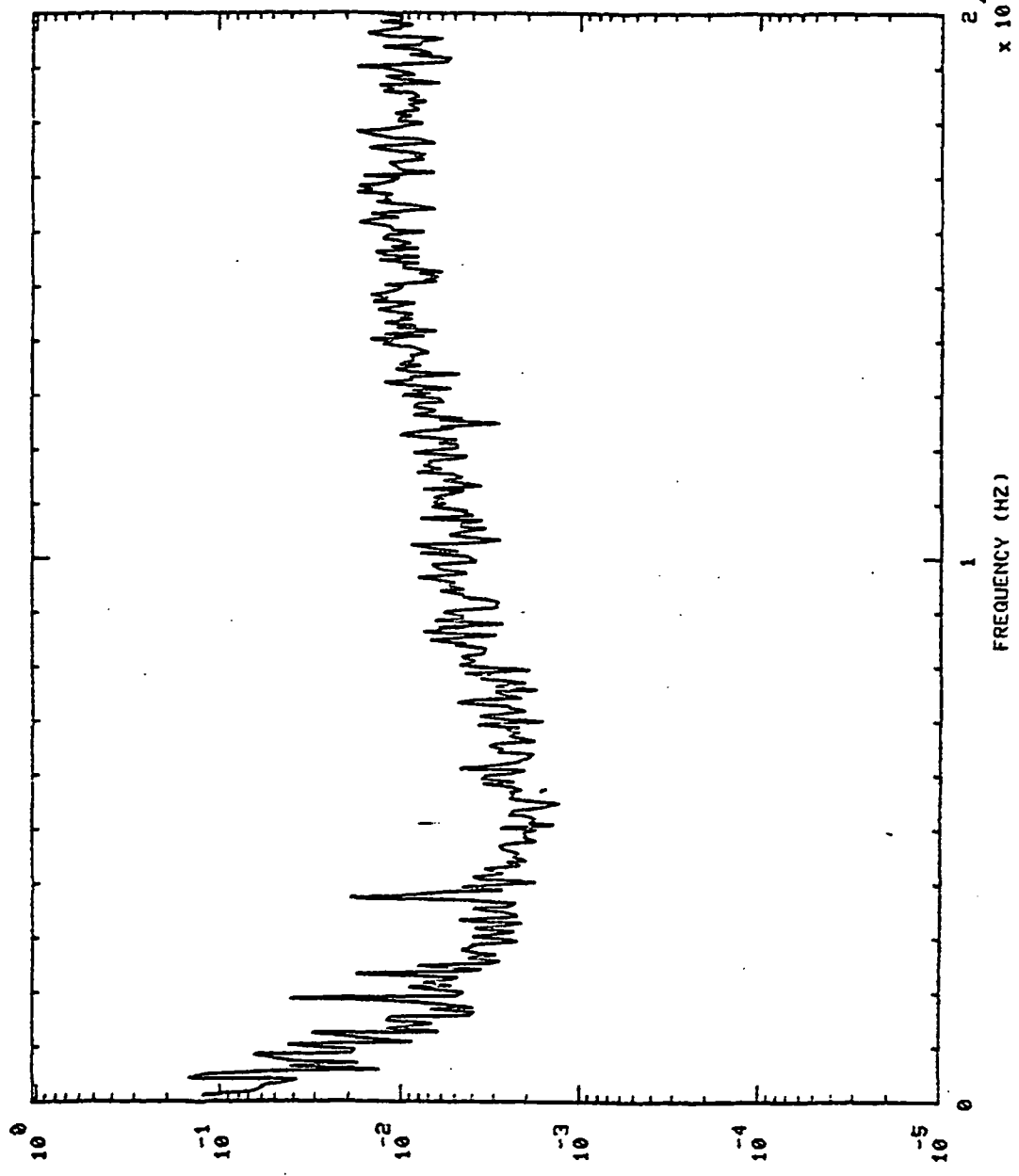
901407 HPOP BAL CAU PR2 S+ 75.0





S+ 200.0

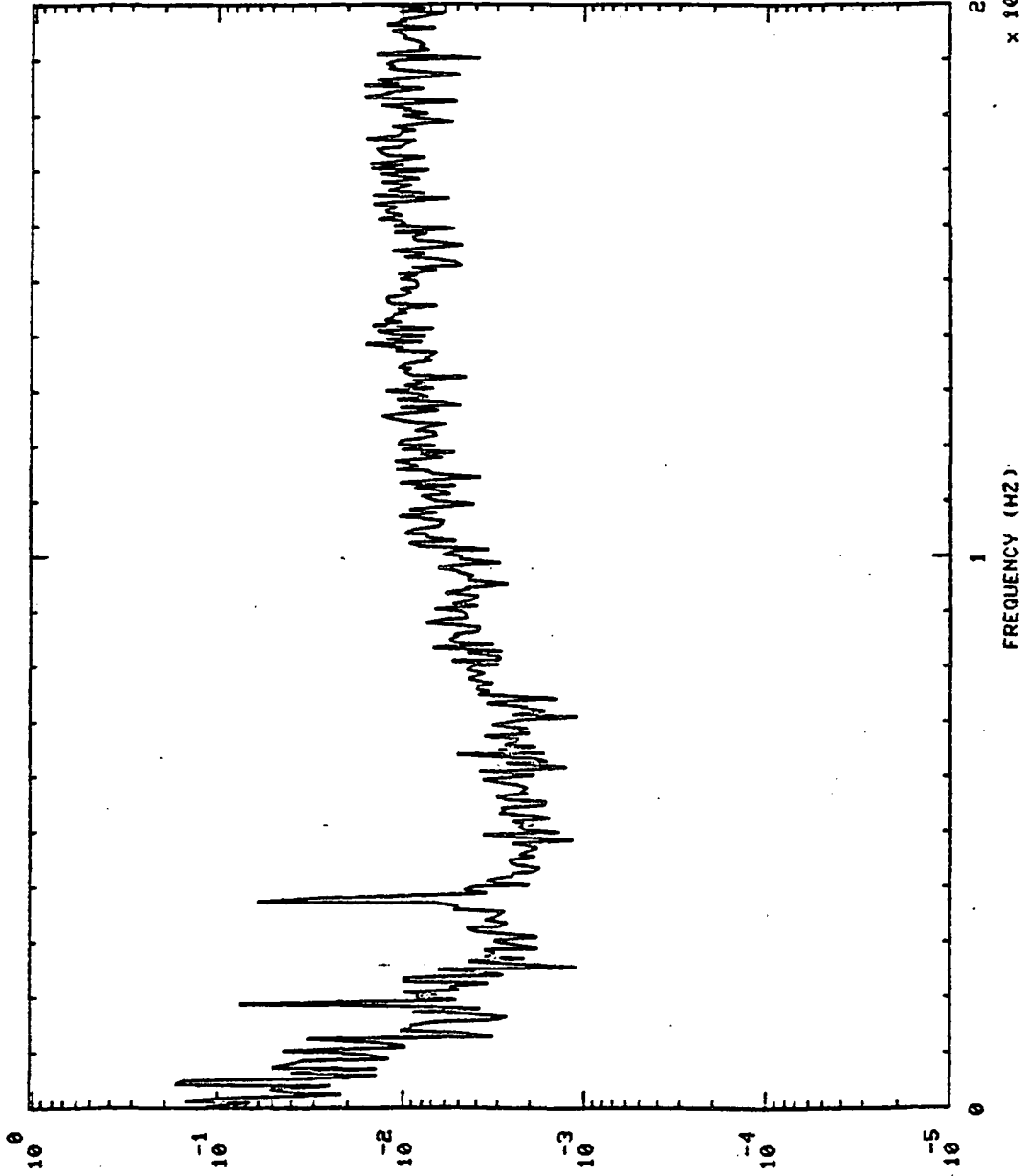
901407 HIPOP BAL CAU PR2



P S Q / H Z

FREQUENCY (HZ) x 10<sup>4</sup>

901407 HPOP BAL CAU PRE S+ 400.0

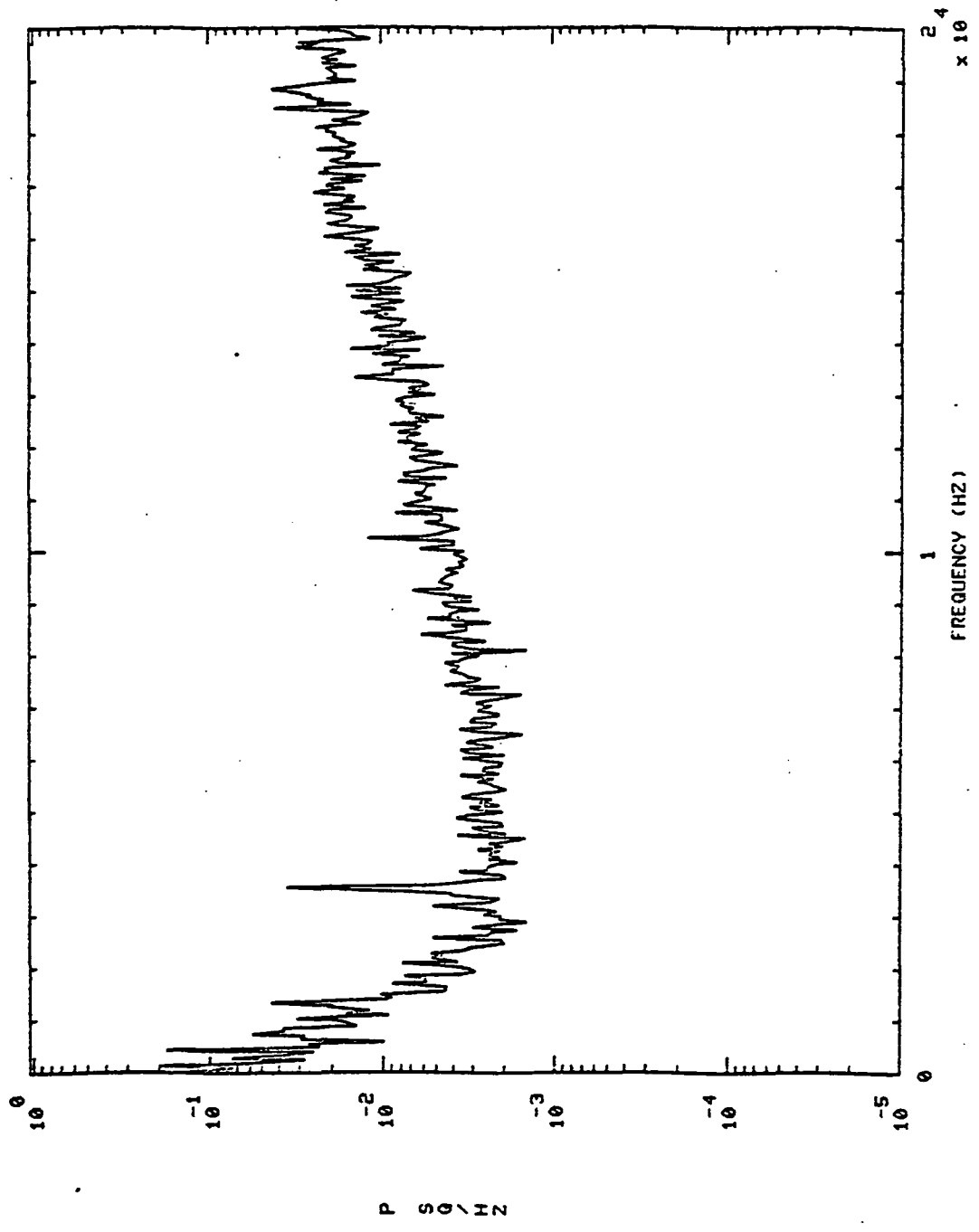


P S O \ H Z

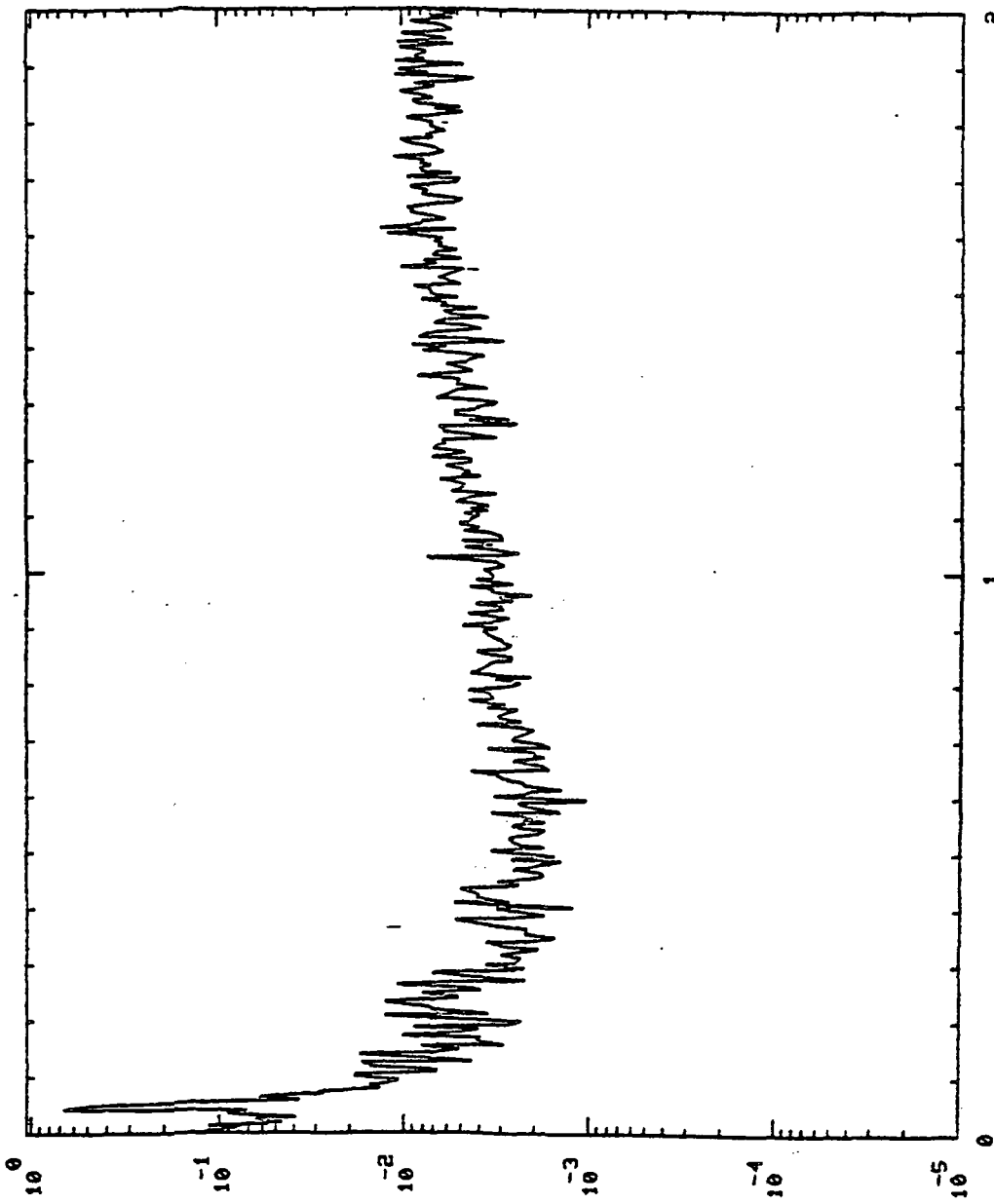
FREQUENCY (HZ)

2.4  
 $\times 10^4$

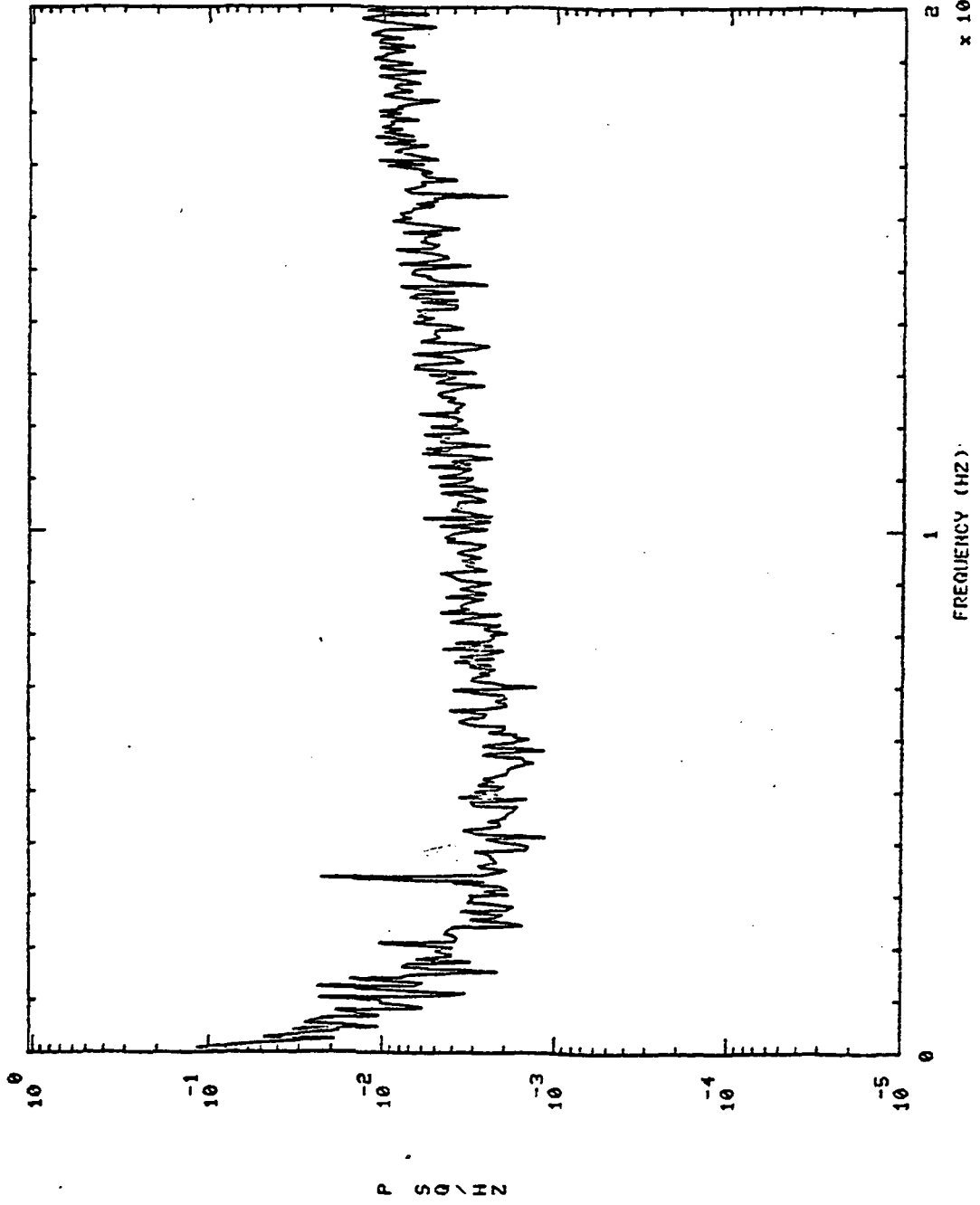
901407 HPOP BAL CAU PR2 S+ 430.0



901407 HPOP BAL CAU PRI S+ 20.0



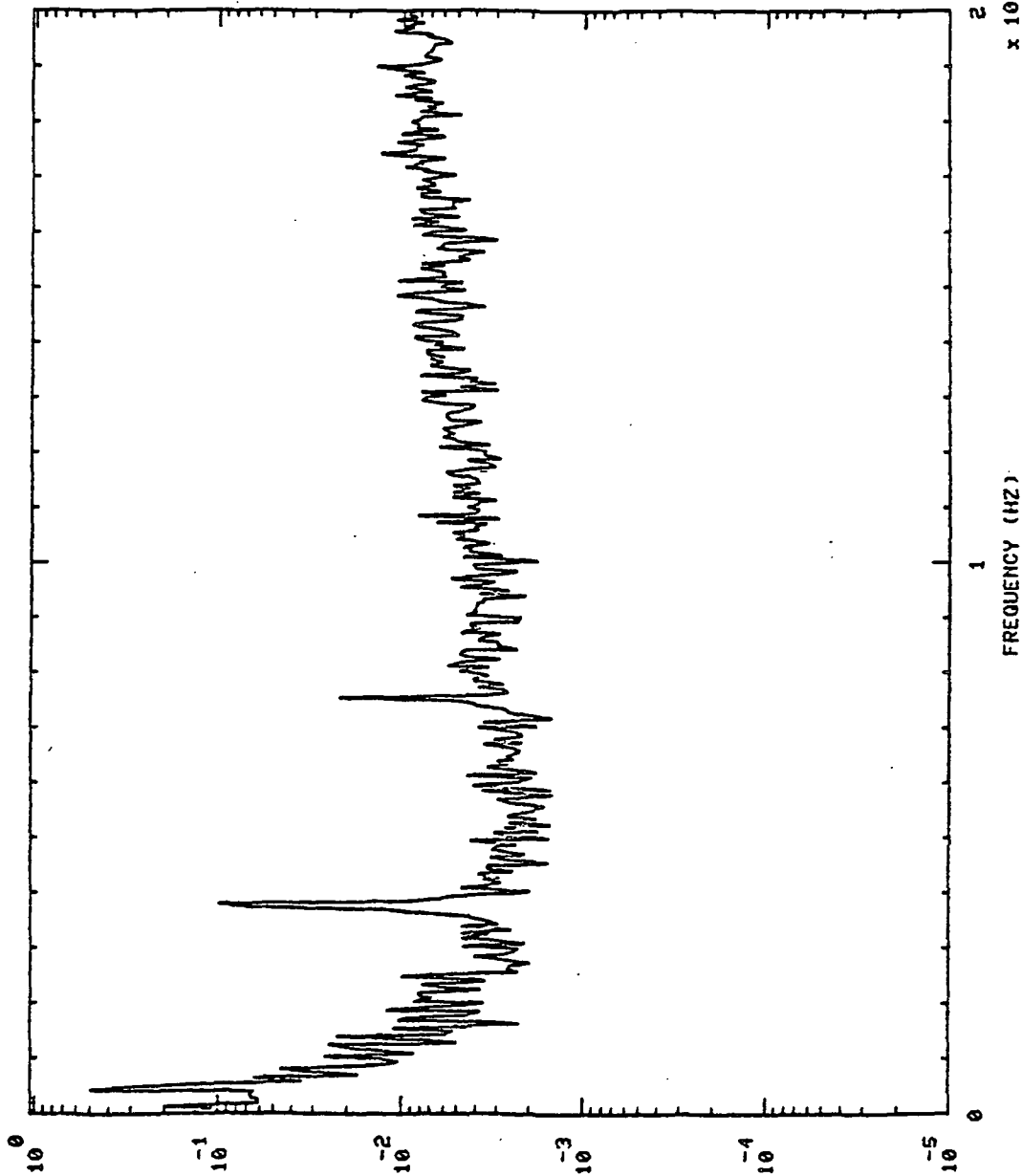
901407 HPOP BAL CAU PR1 S+ 45.0



S+ 75.0

HPOP DAL CAU PR1

901407

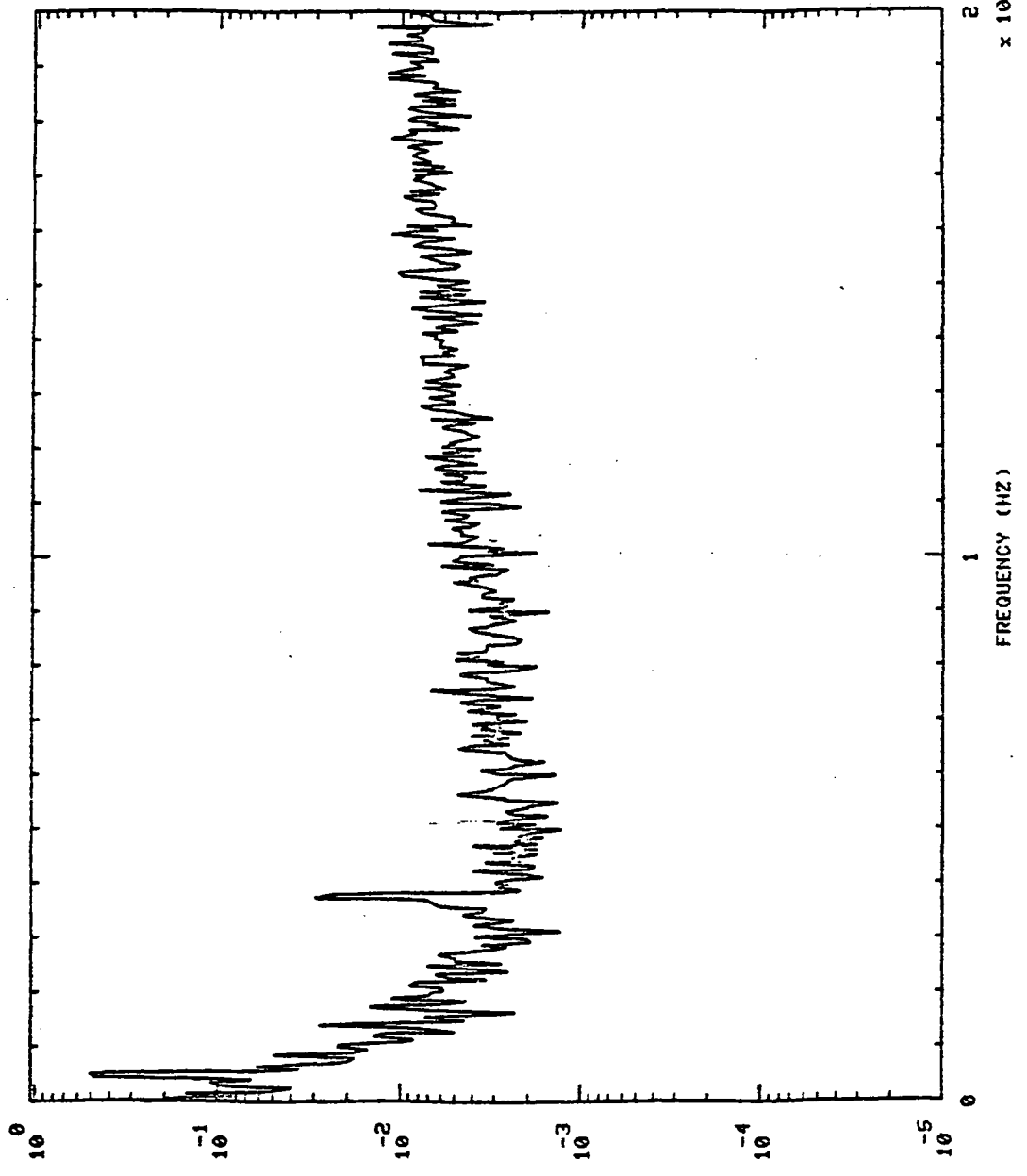


P SQ/HZ

24  
x 10<sup>4</sup>

FREQUENCY (HZ)

901407 HPOP BAL CAU PR1 S+ 200.0

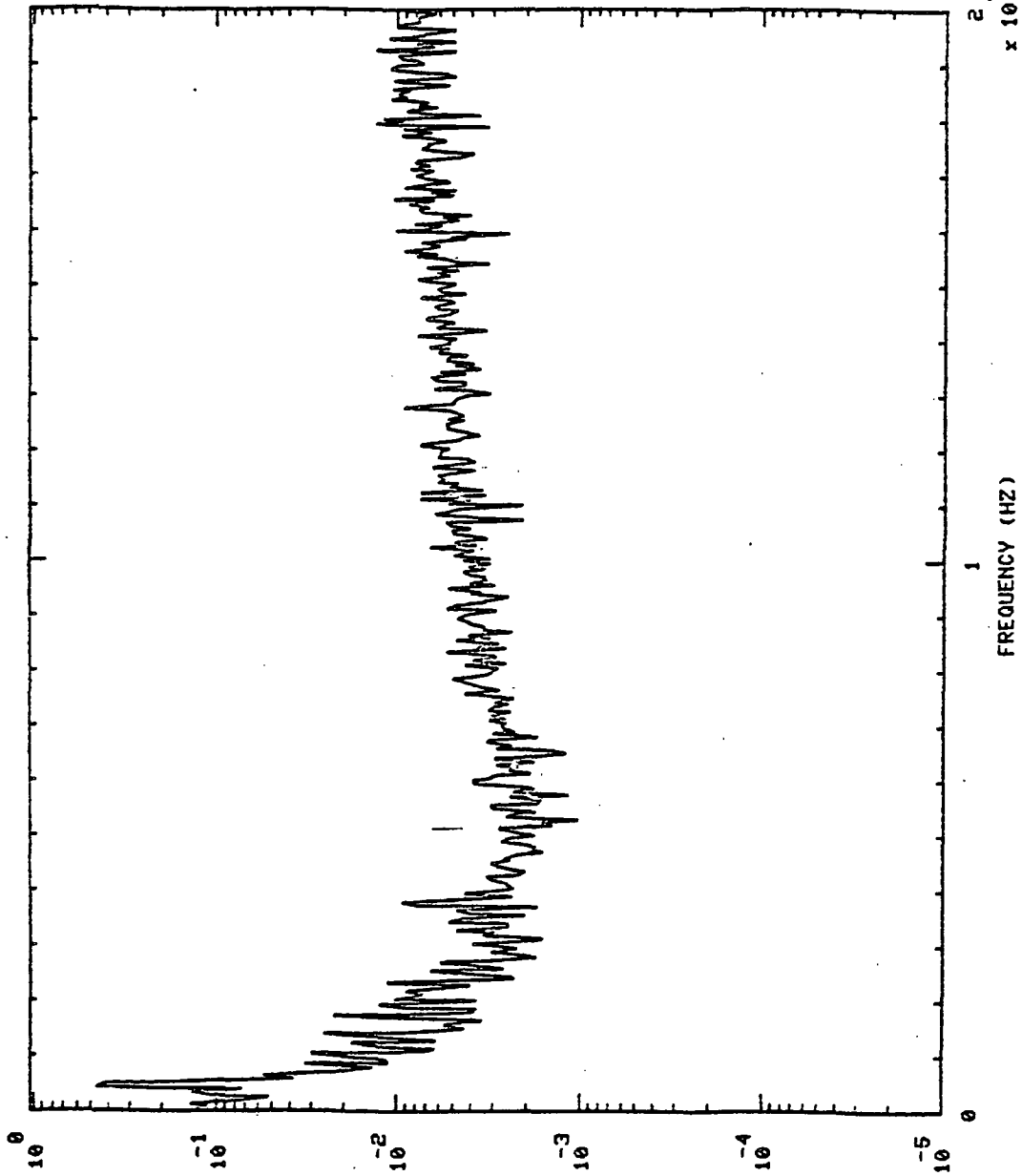


P S D \ H Z

901407

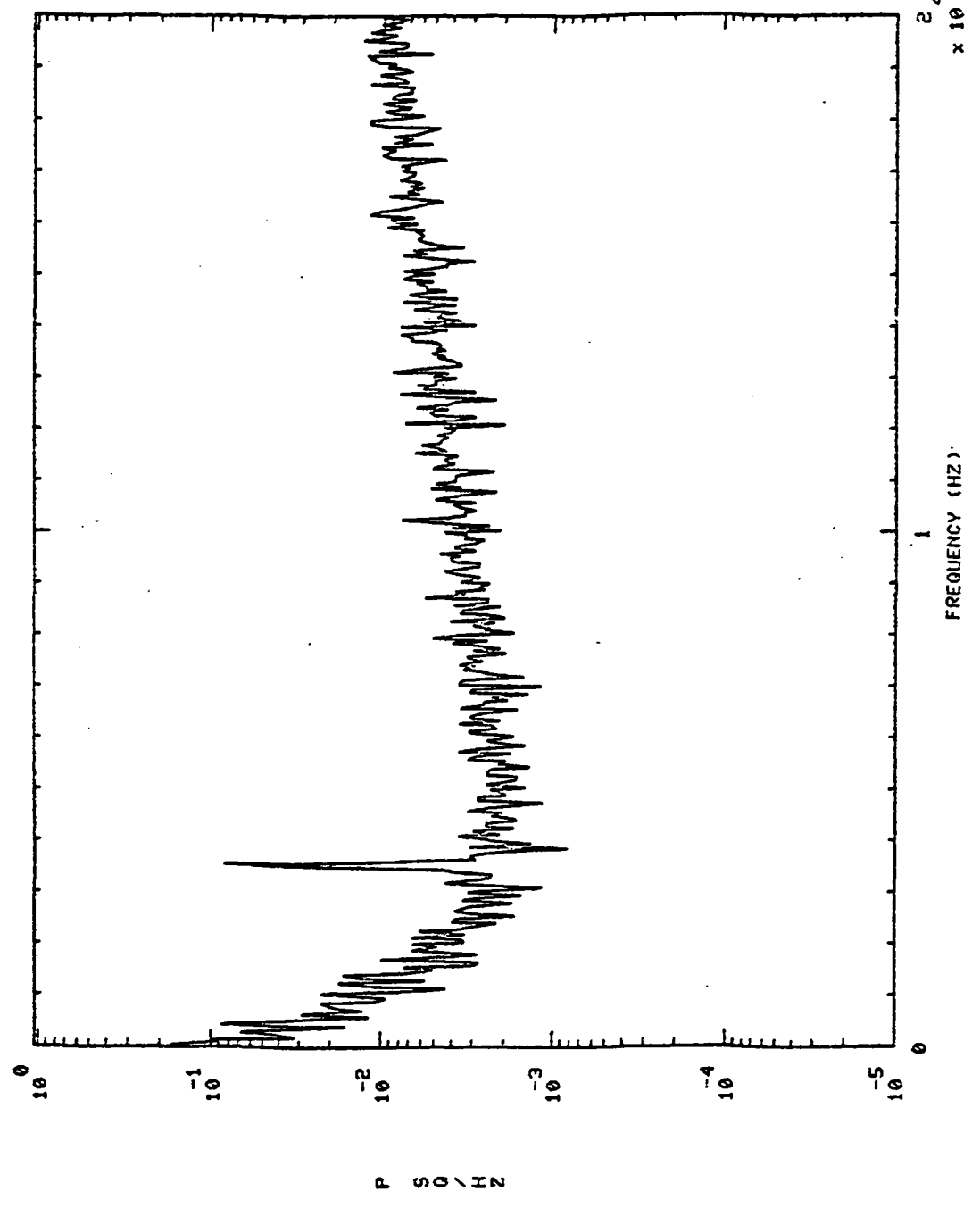
MPOP BRL CAU PRI

S+ 400.0



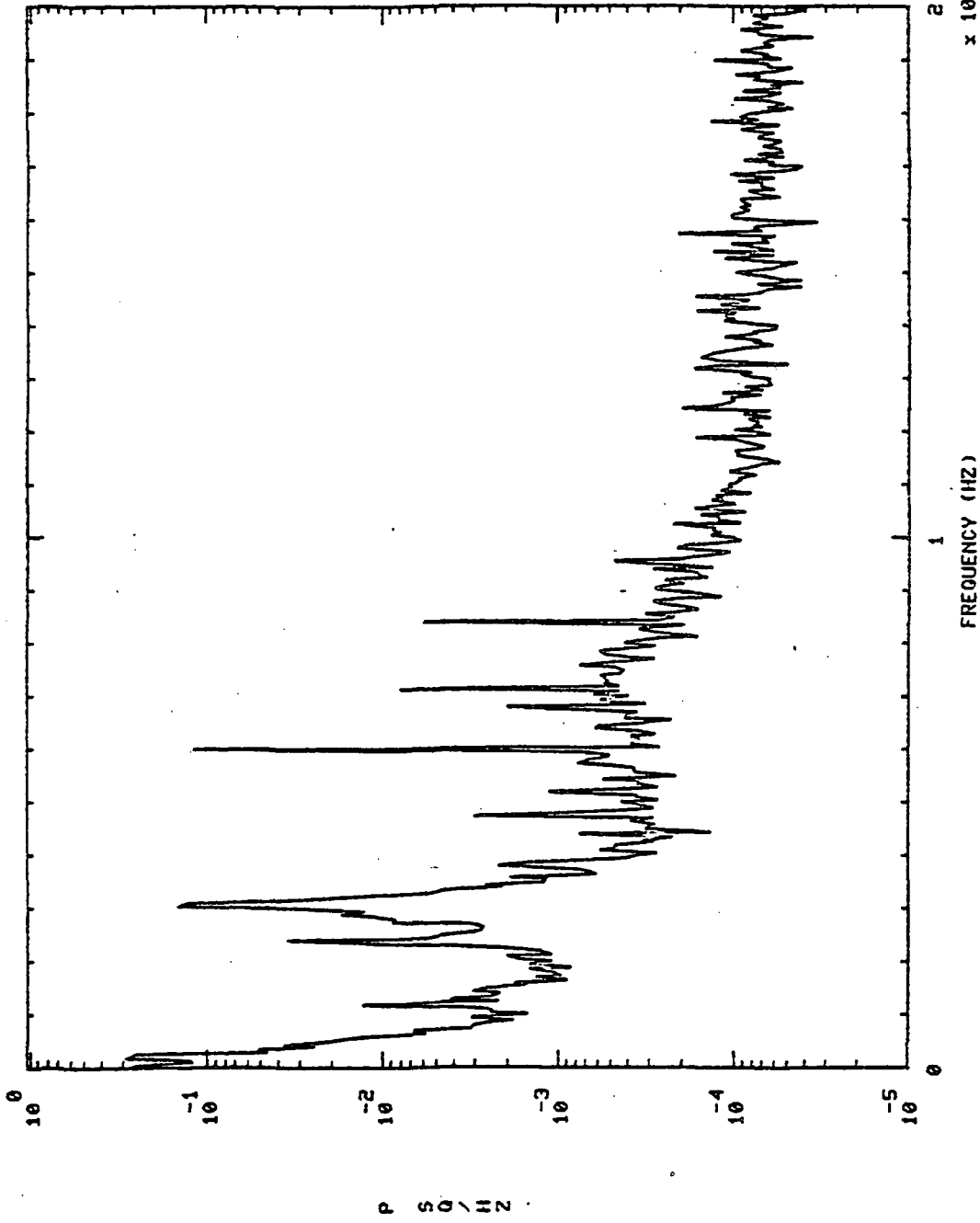


901407 HPOP BAL CAU PR1 S+ 430.0



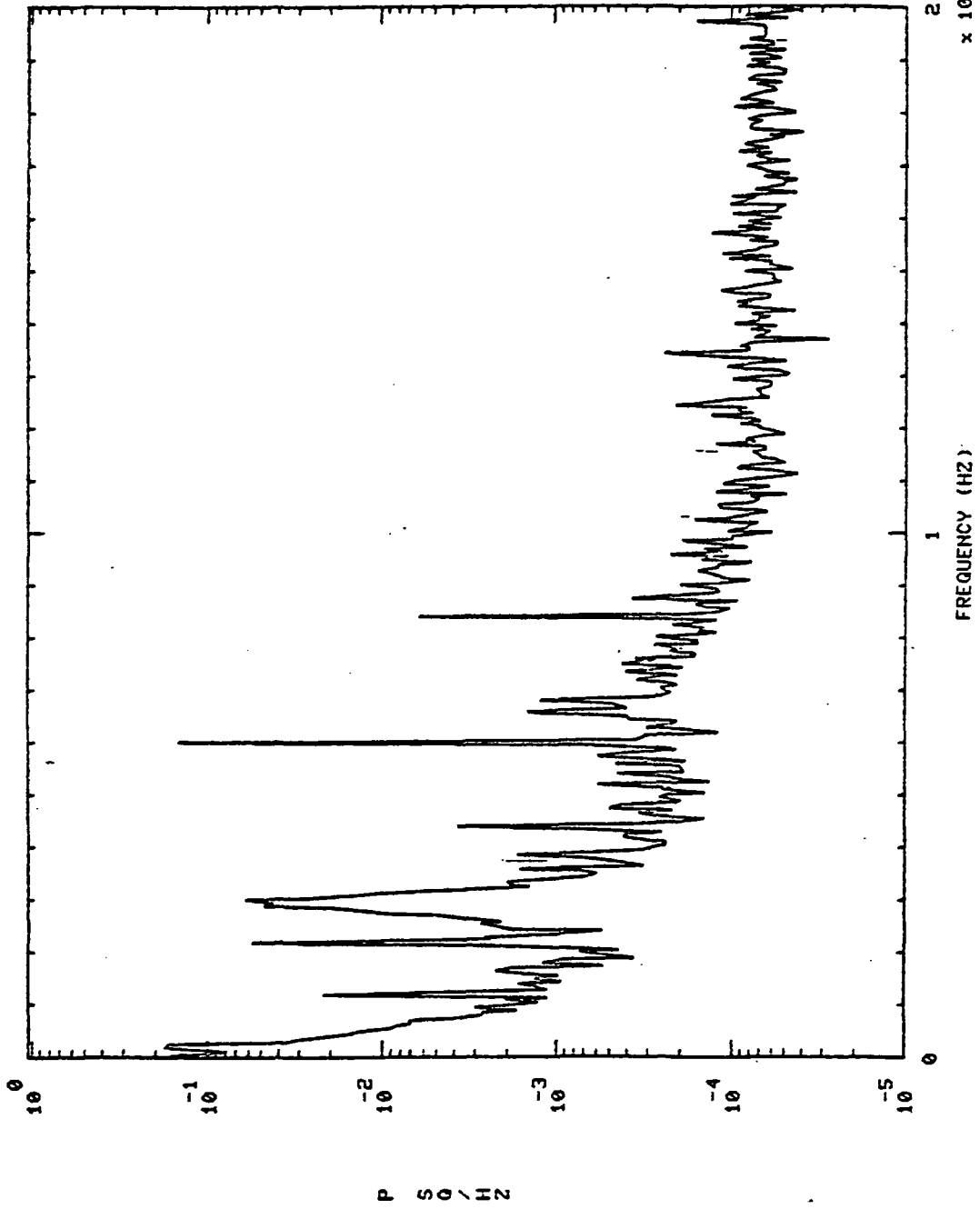
S+ 20.0

901407 FPB PC



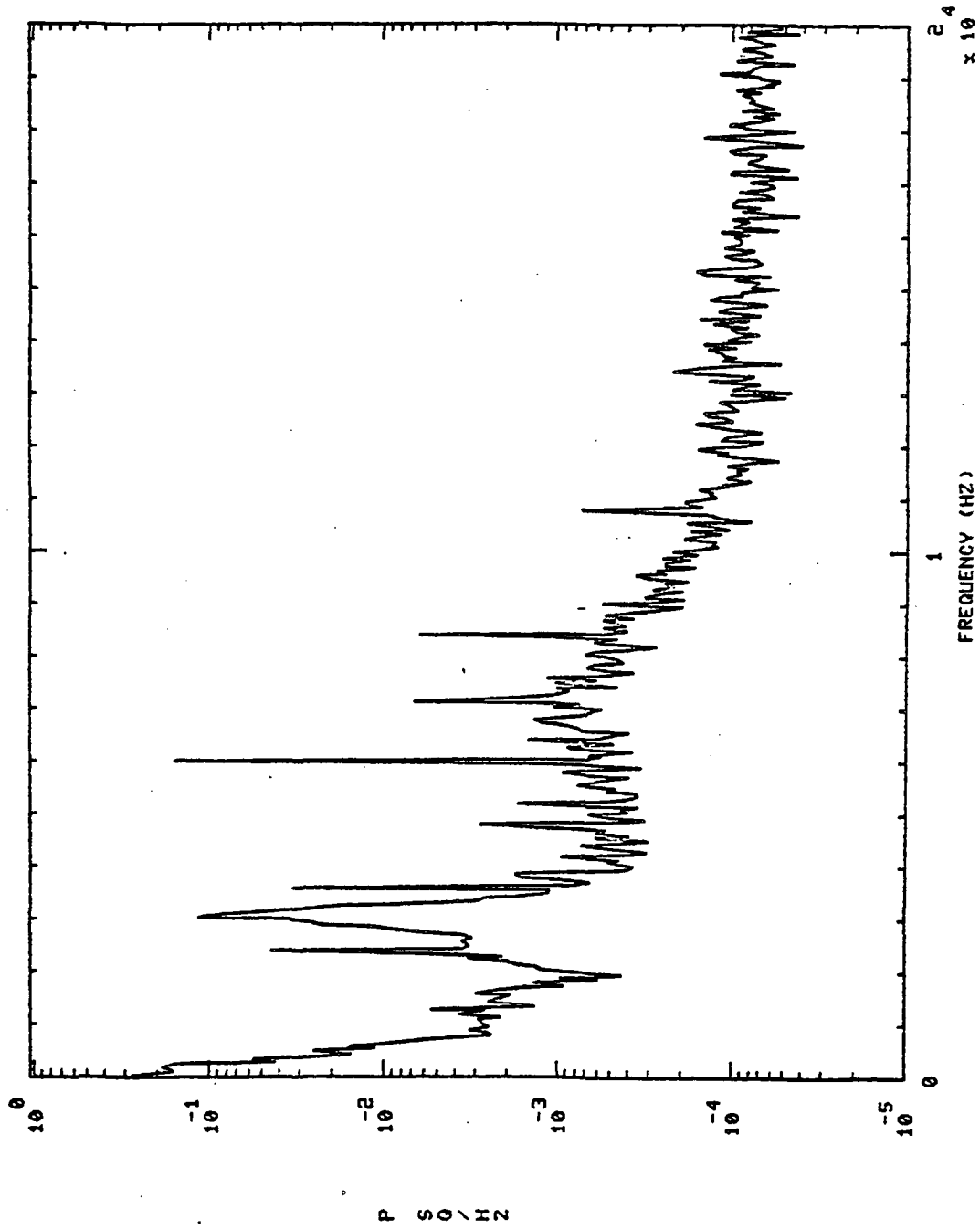
S+ 45.0

901407 FFB PC



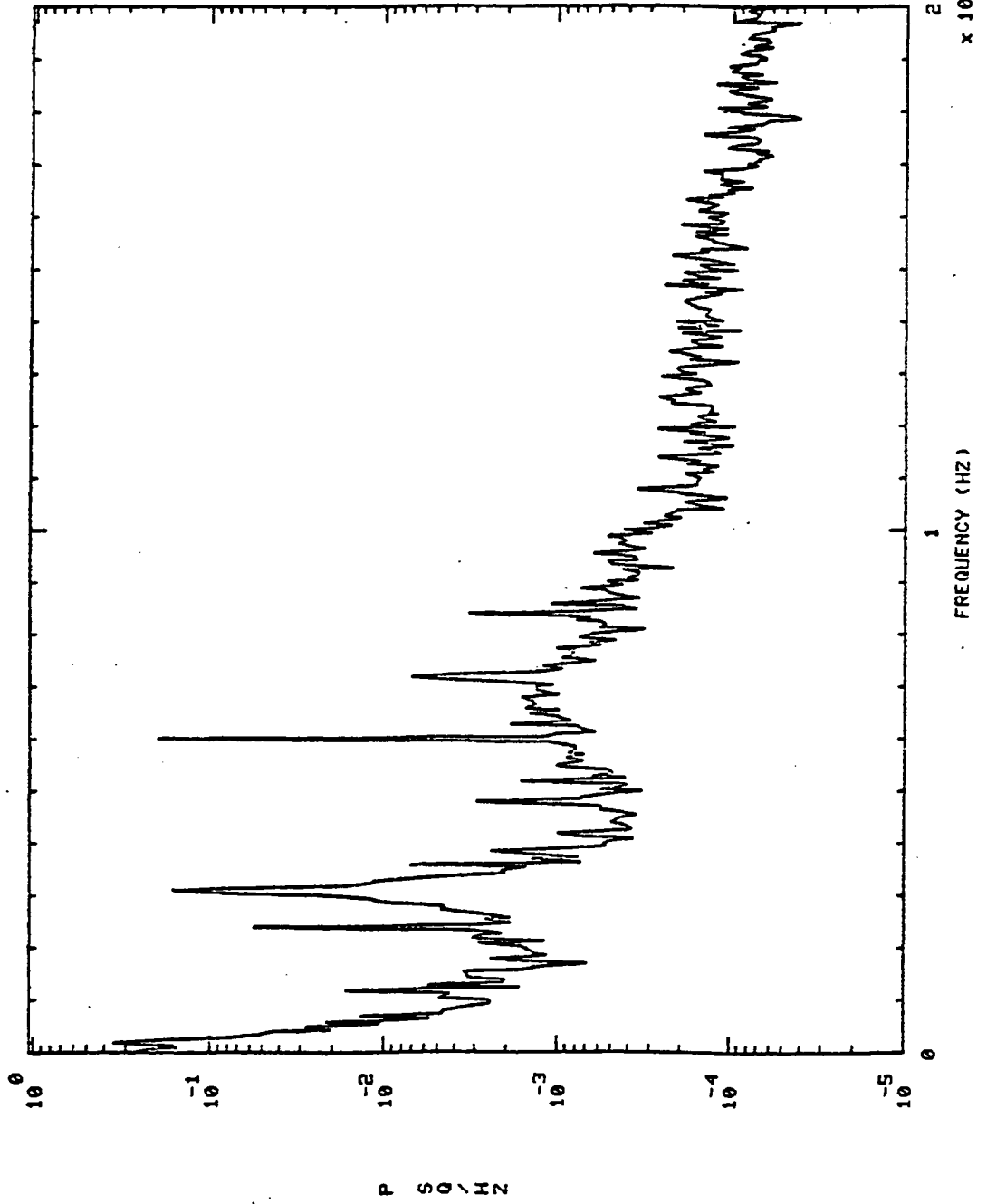
S+ 75.0

901407 FPB PC



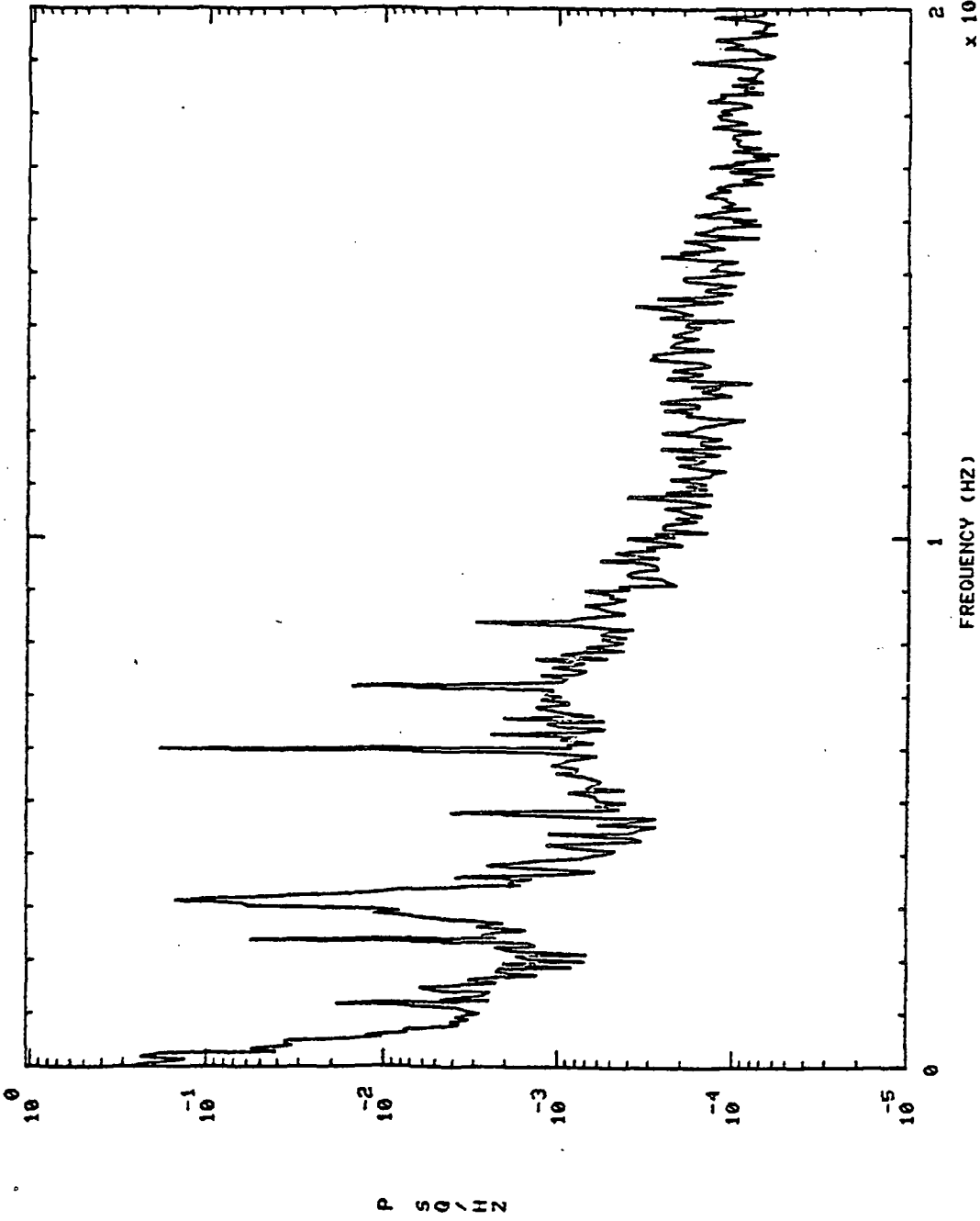
S+ 200.0

901407 FPB PC

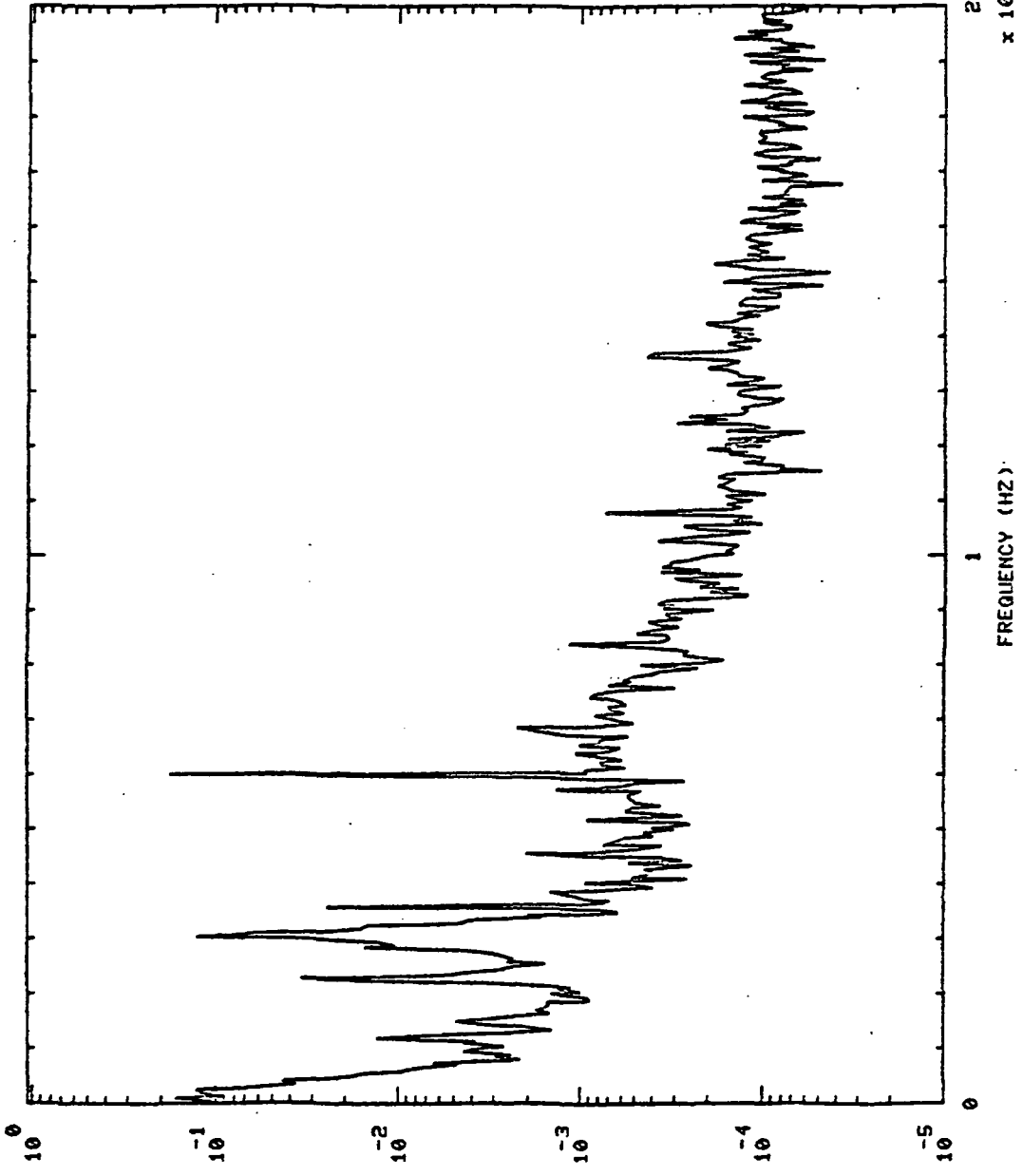


St 400.0

901407 FPB PC



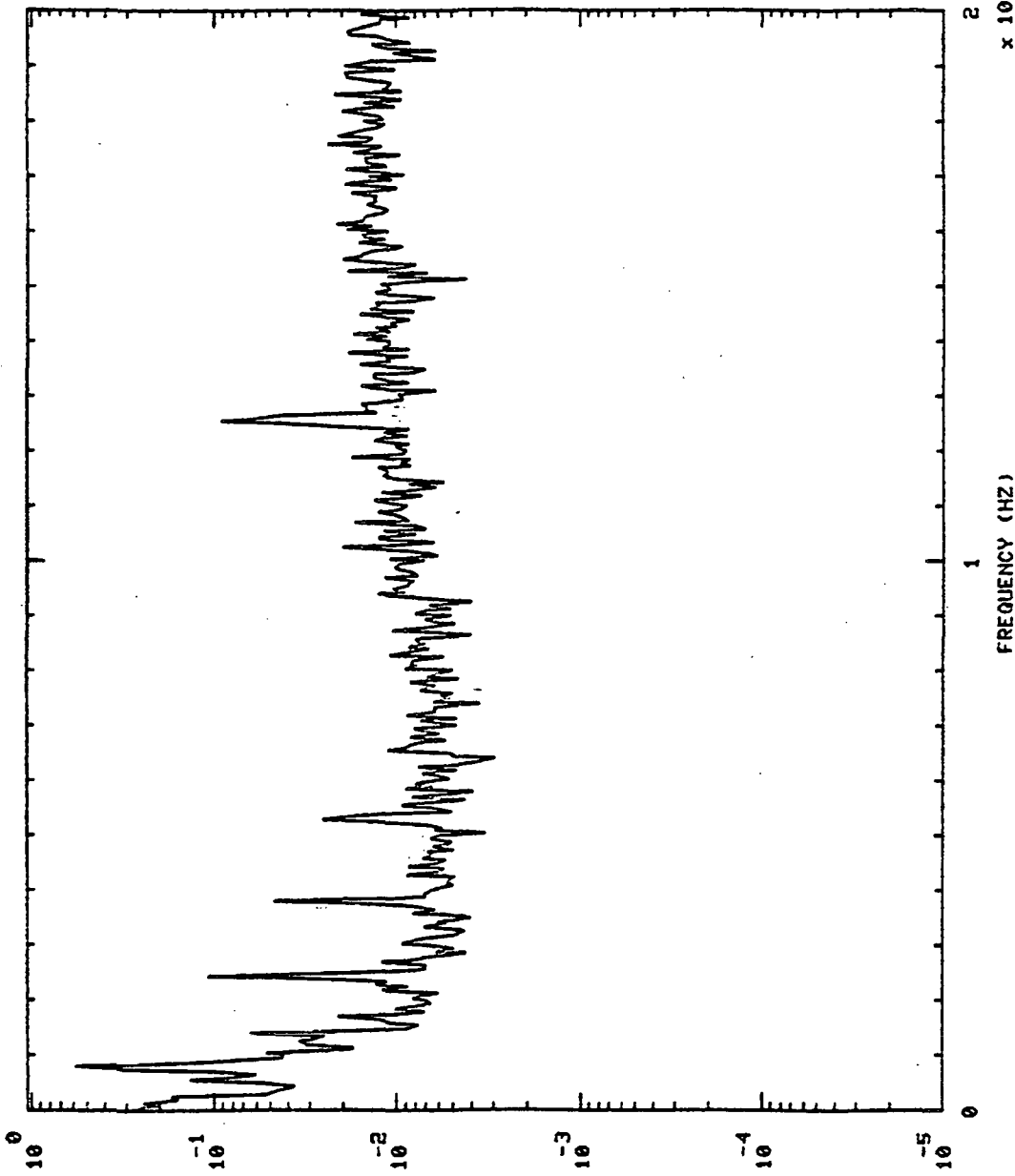
901407 FFB PC S+ 430.0



P S D \ H N

S+ 20.0

901407 OPB PC PR



P SQ/IN

2.4  
x 10<sup>4</sup>

1

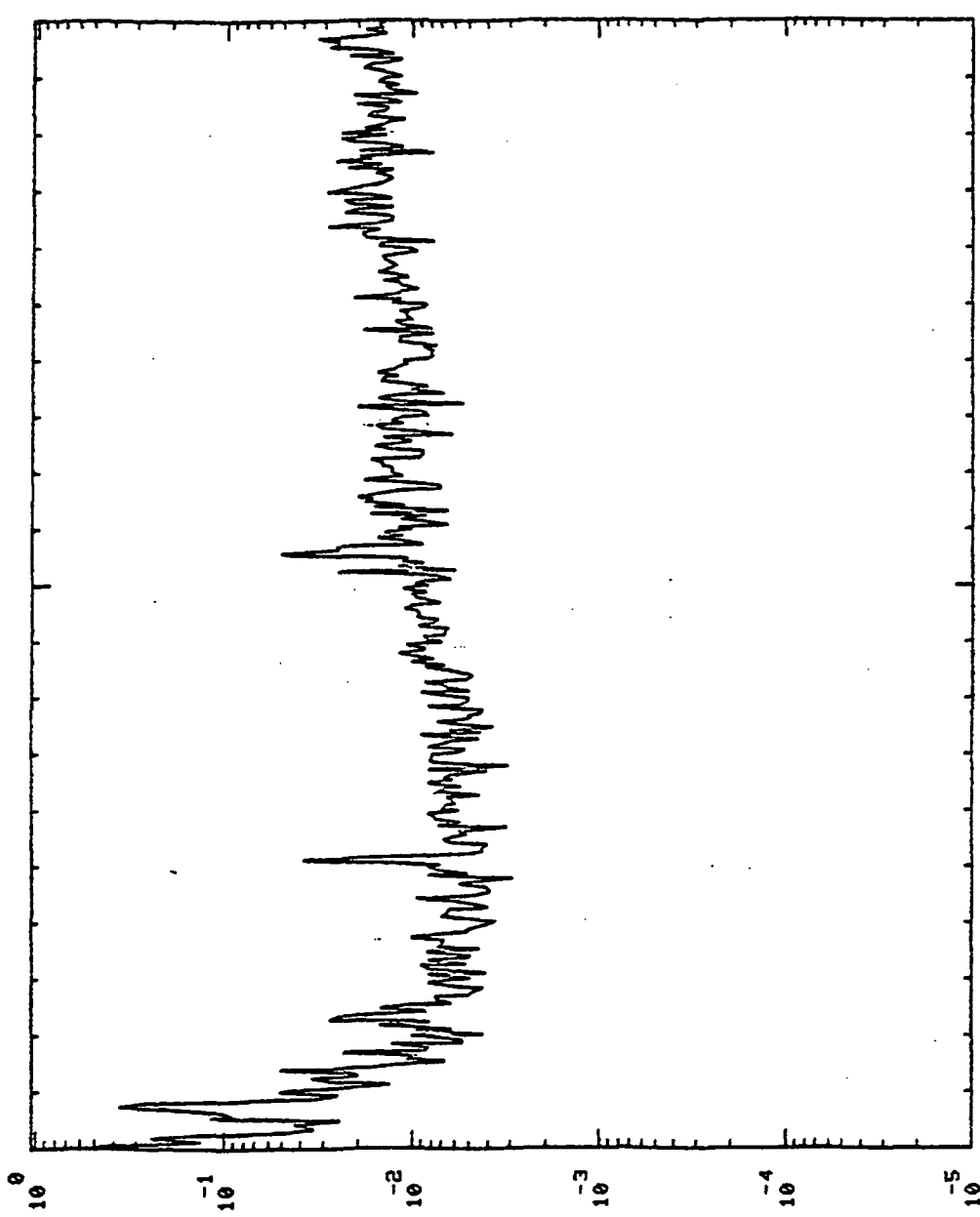
FREQUENCY (HZ)

0



S+ 45.0

901407 OPB PC PR



P S D / H Z

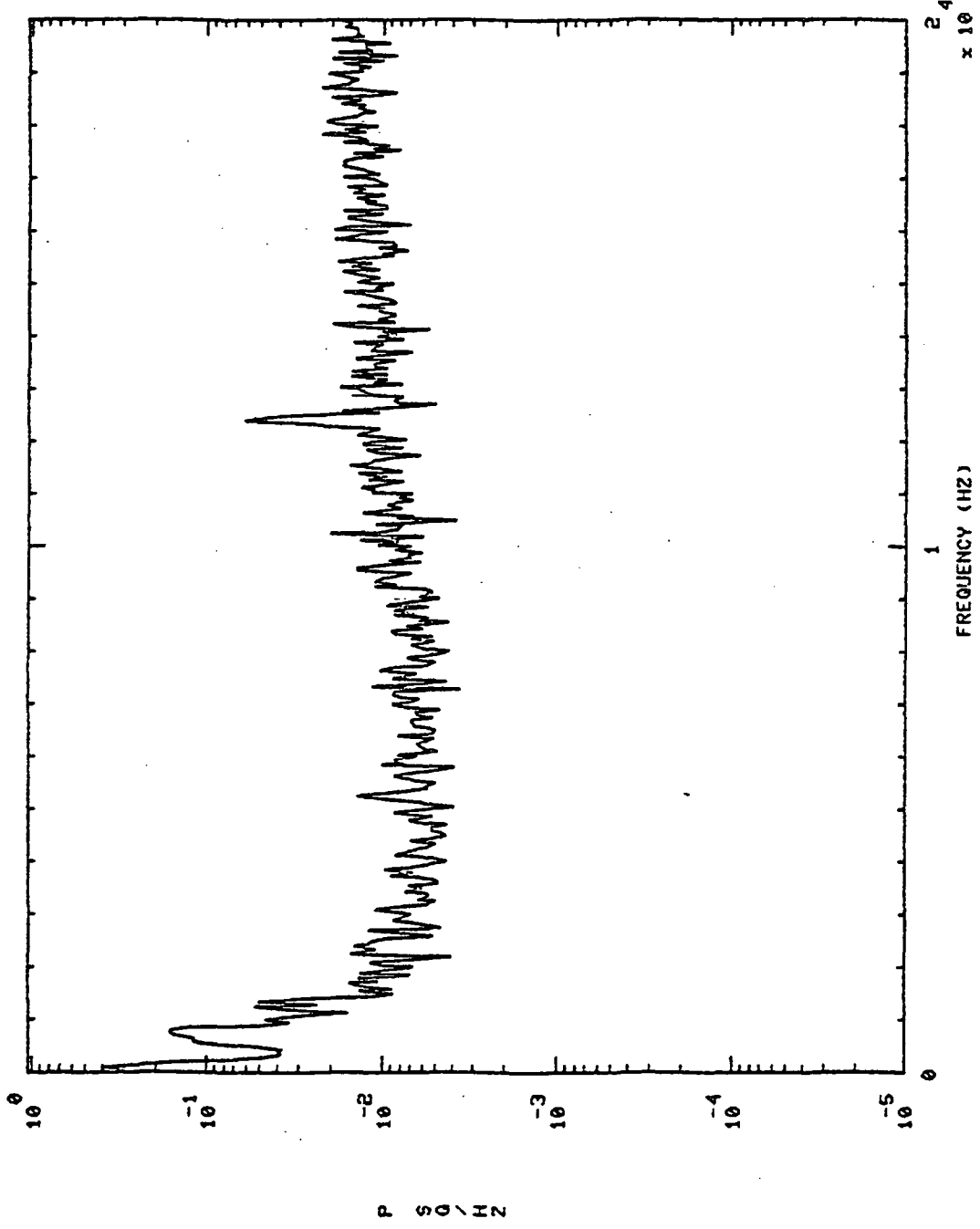
2.4  
x 10<sup>4</sup>

1  
FREQUENCY (HZ)

0

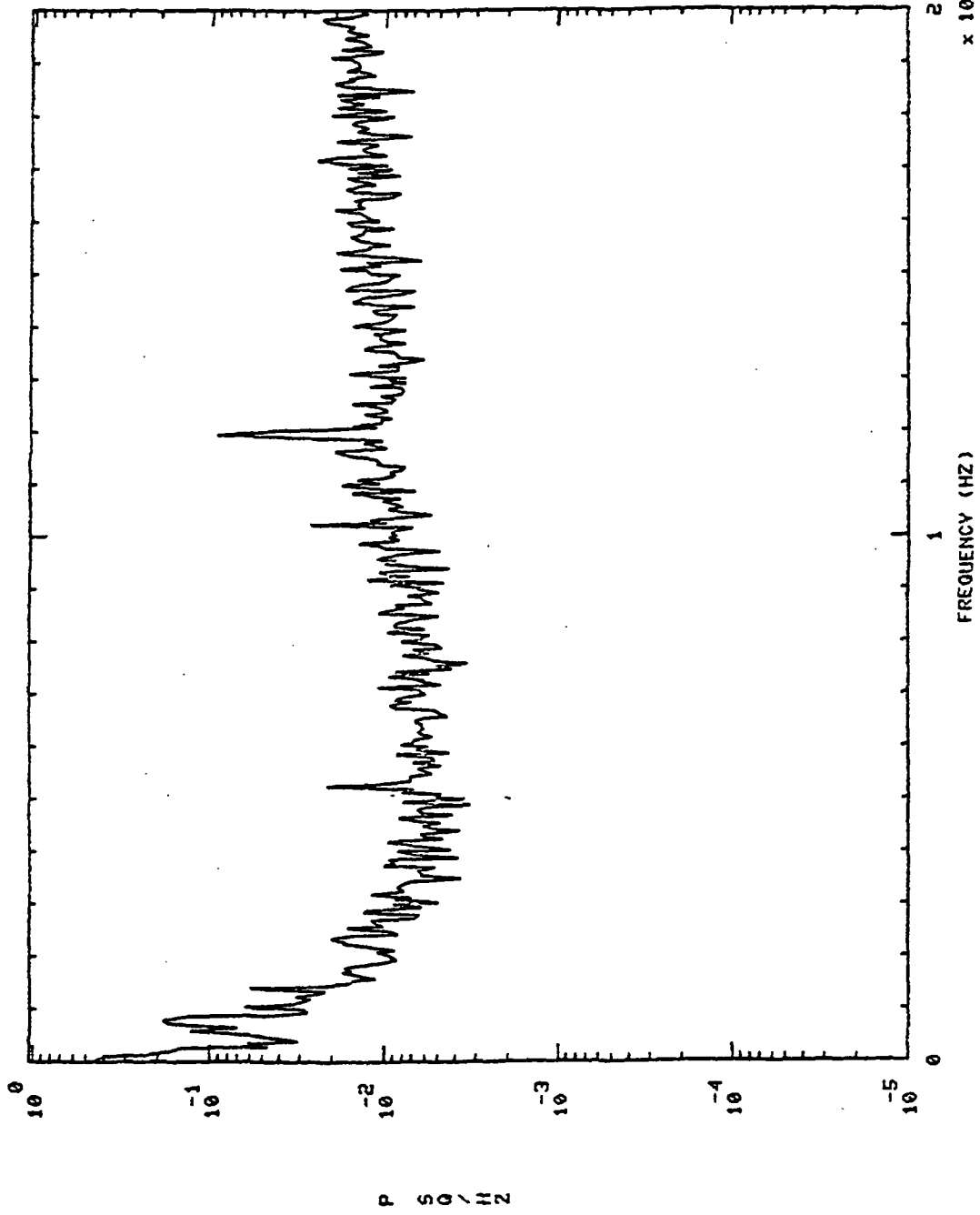
S+ 75.0

901407 OPB PC PR



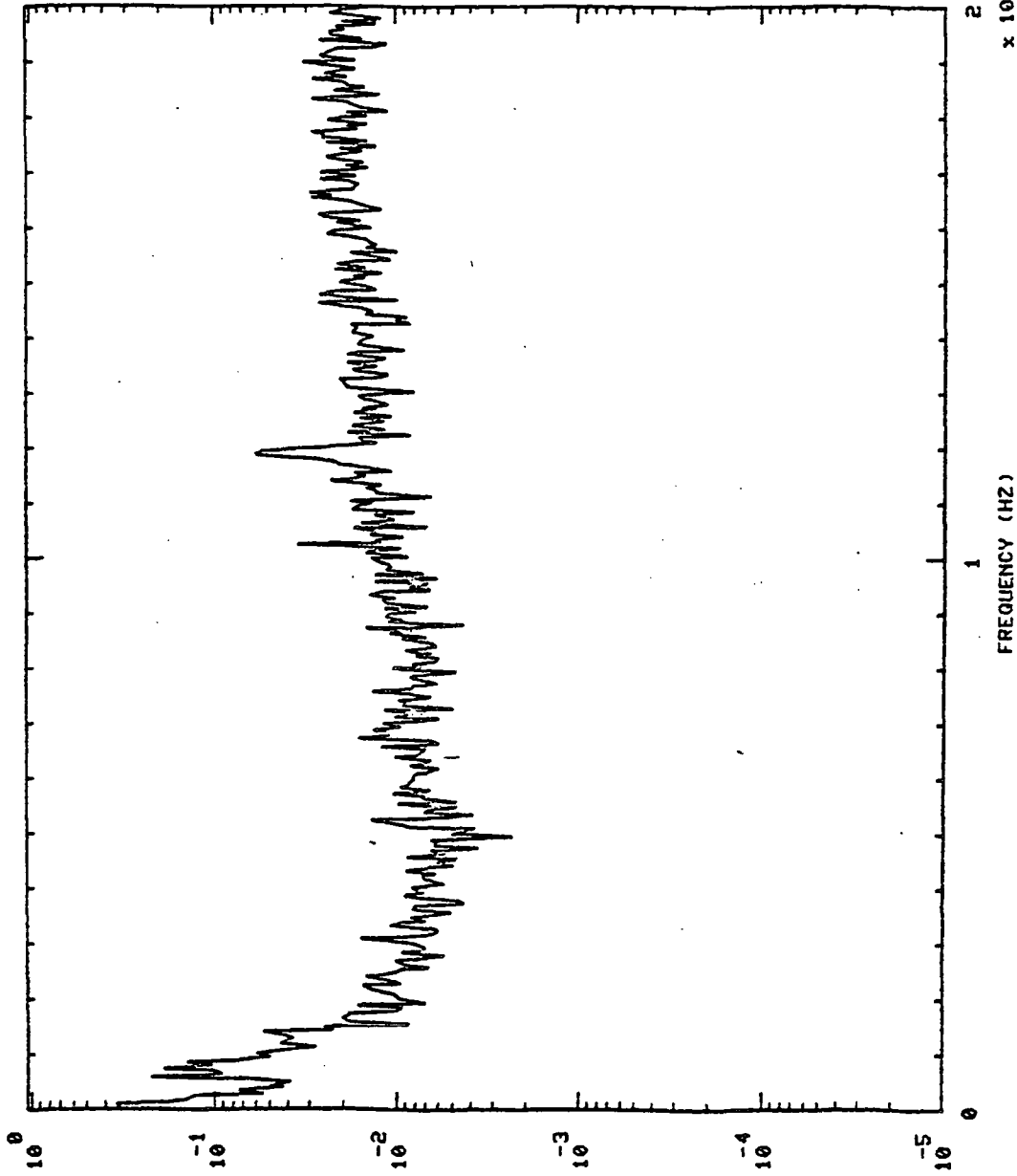
901407 OPB PC PR

S+ 200.0



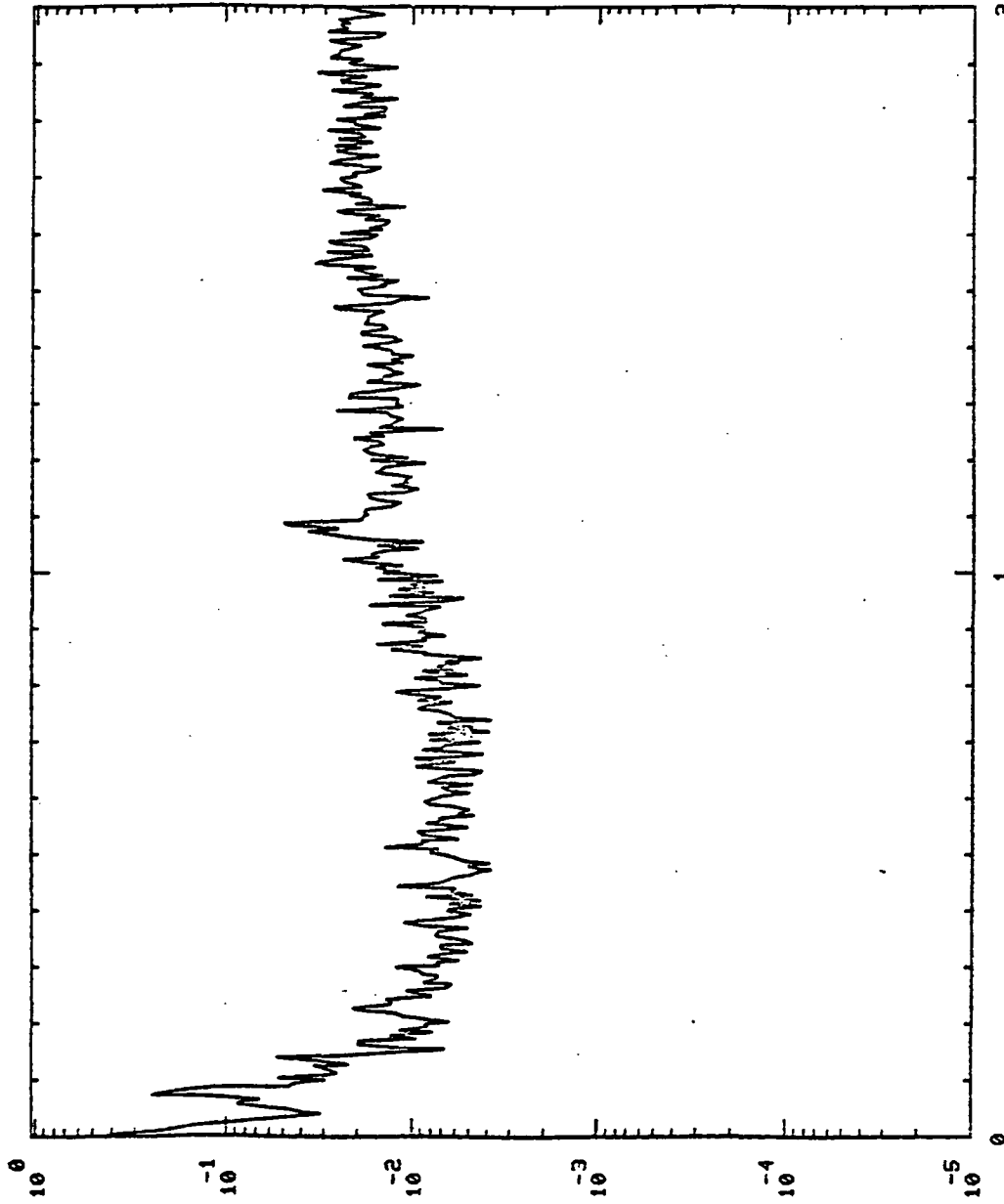
S+ 400.0

901407 OPB PC PR



S+ 430.0

901407 OPB PC PR



P S D / H Z

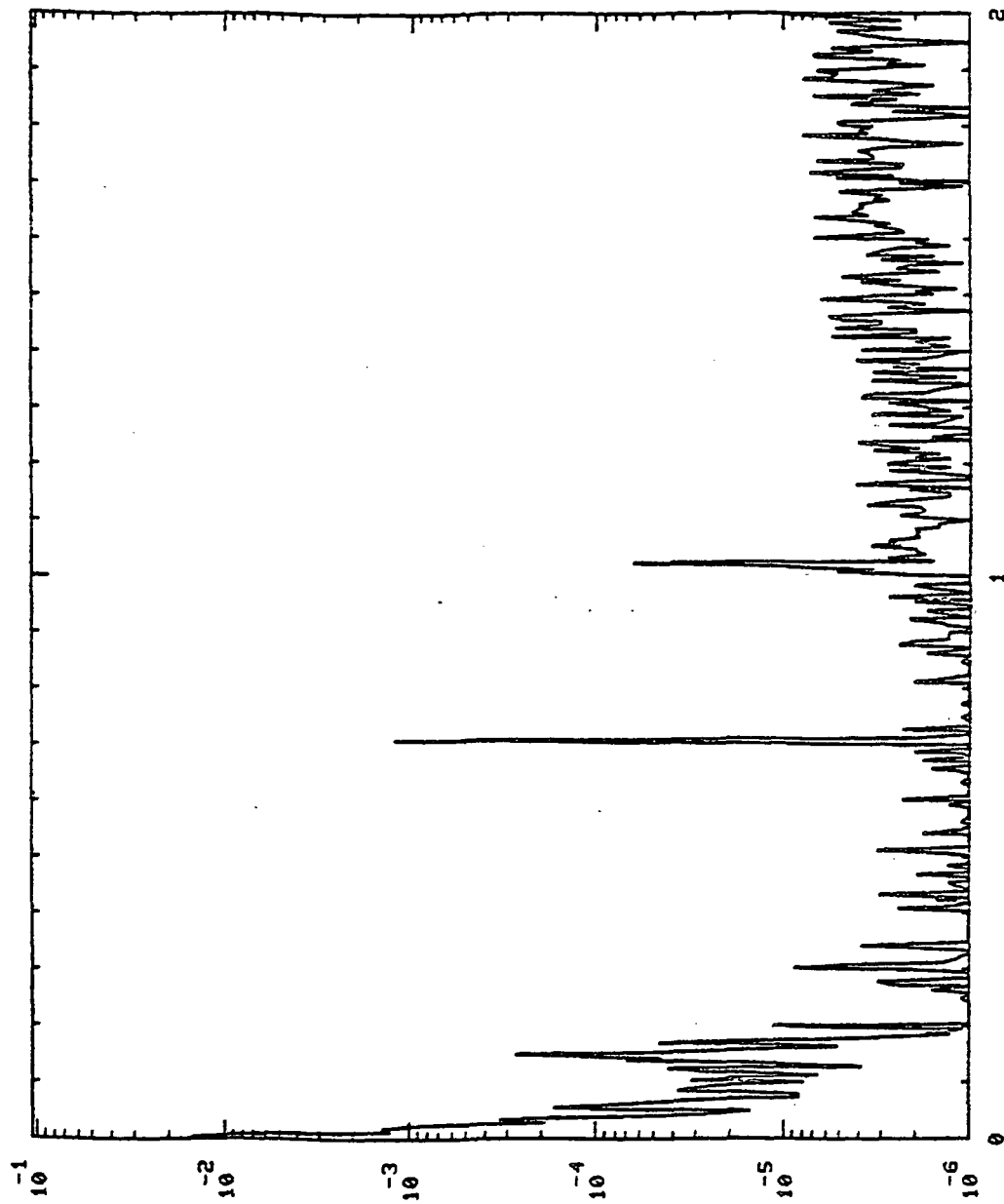
FREQUENCY (HZ)

$\times 10^4$

S+ 20.0

HPFP BAL CAU PR

901407

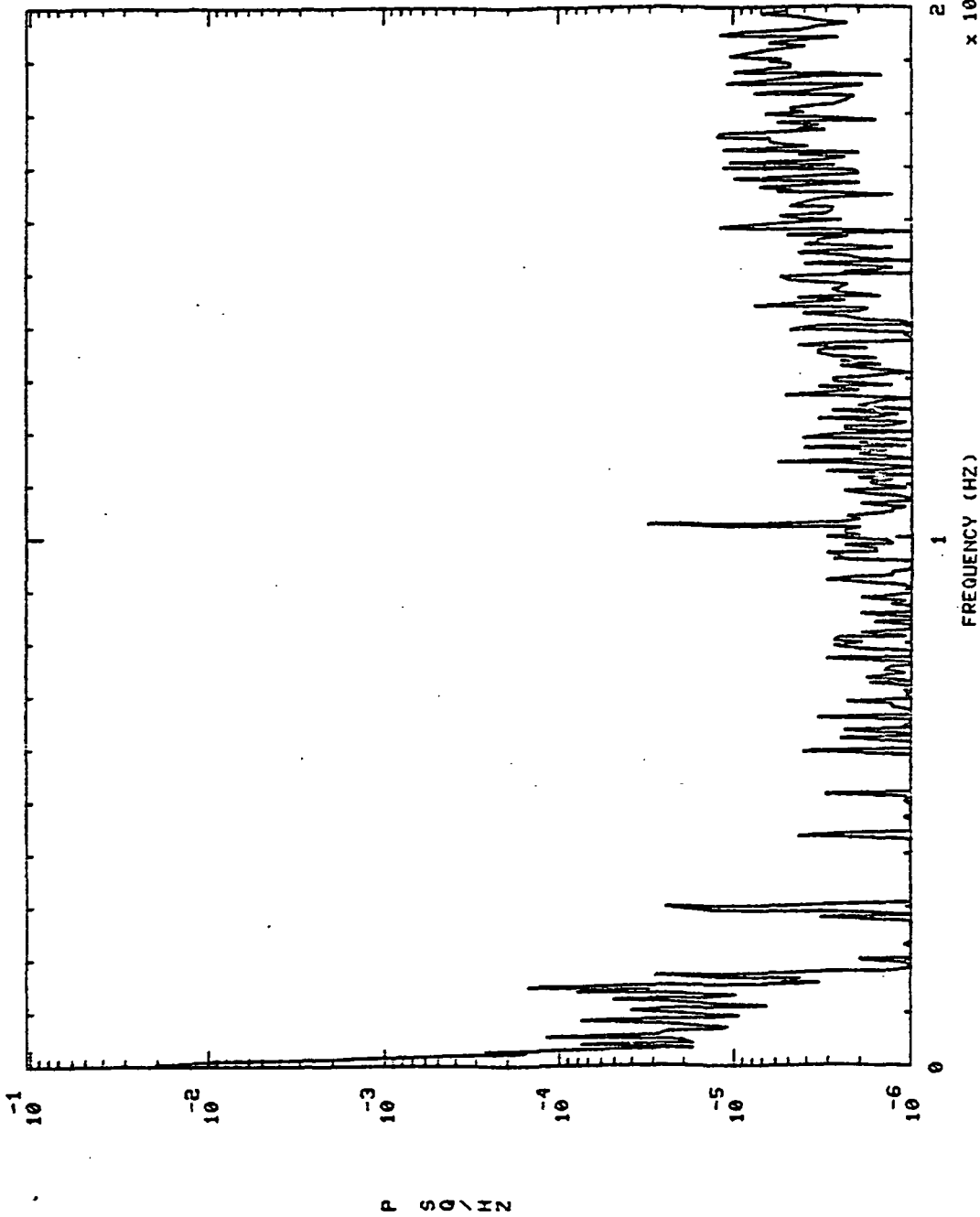


2.4  
x 10

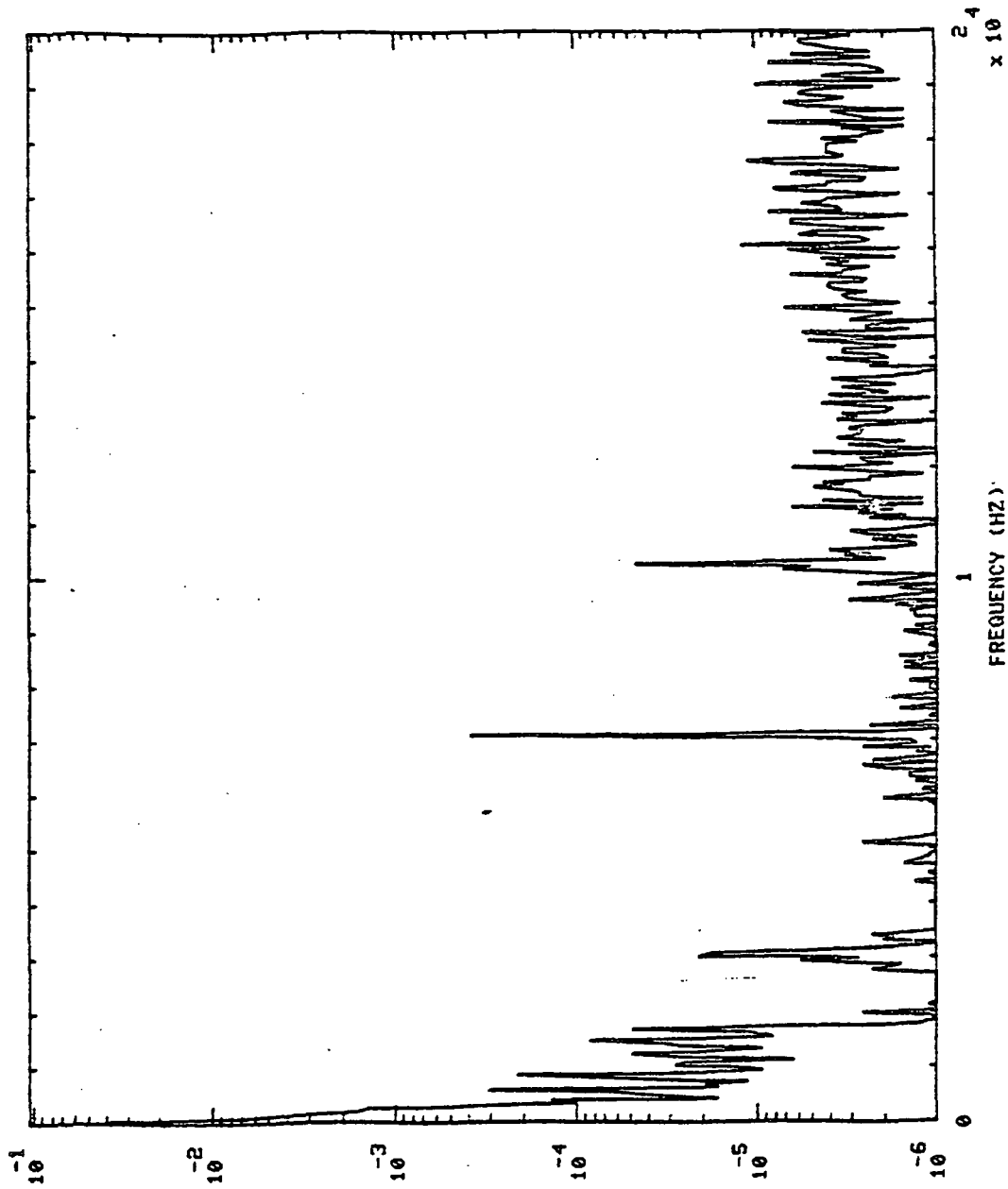
FREQUENCY (HZ)

P SQ/HZ

901407 HPFP DAL CAU PR S+ 45.0



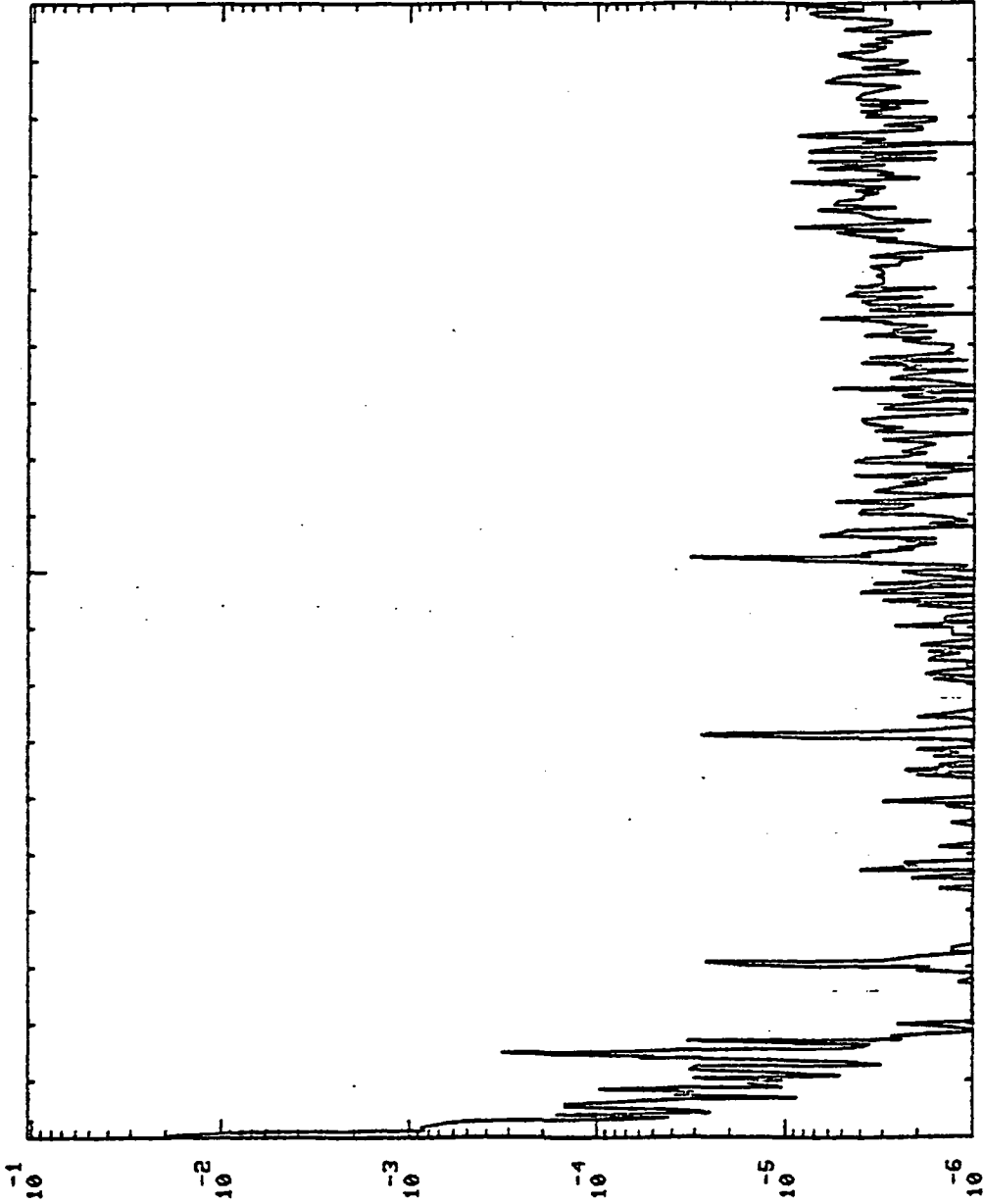
901407 HPFP BAL CAU PR S+ 75.0



P S G \ H Z



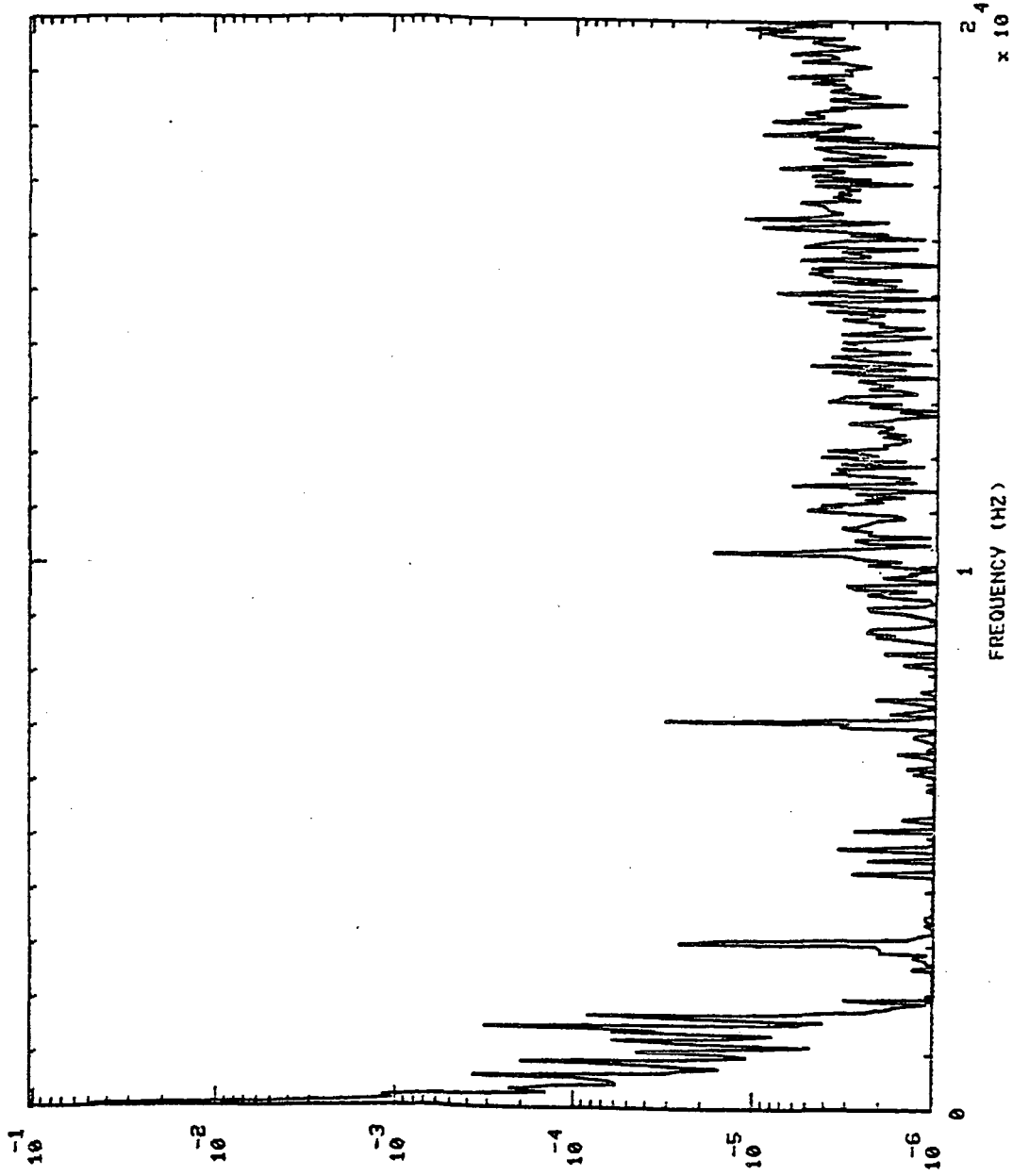
901407 HPFP BAL CAU PR S+ 200.0



P S O \ H Z

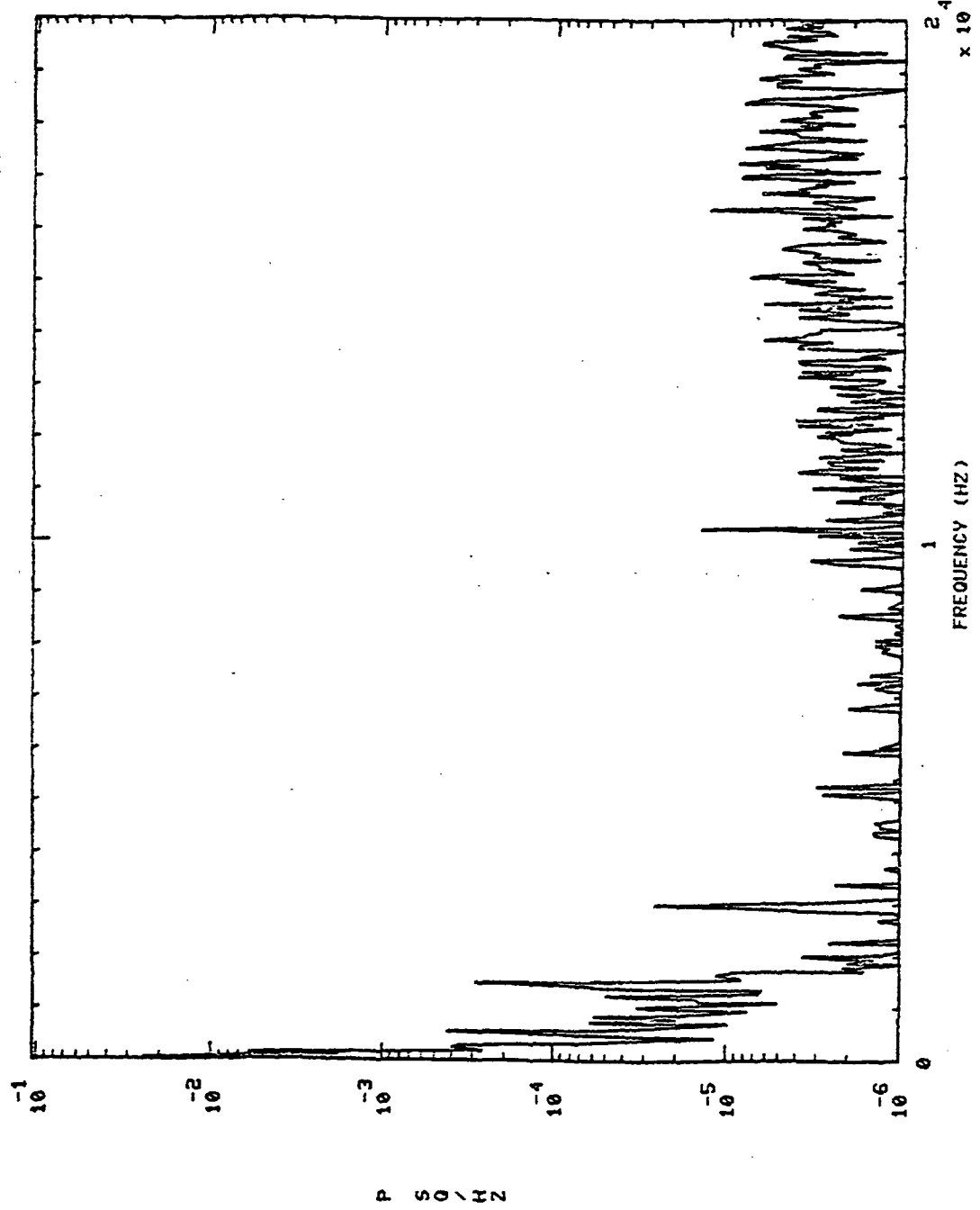
FREQUENCY (HZ) 2.4 x 10<sup>4</sup>

901407 HPFP BAL CAU PR S+ 400.0

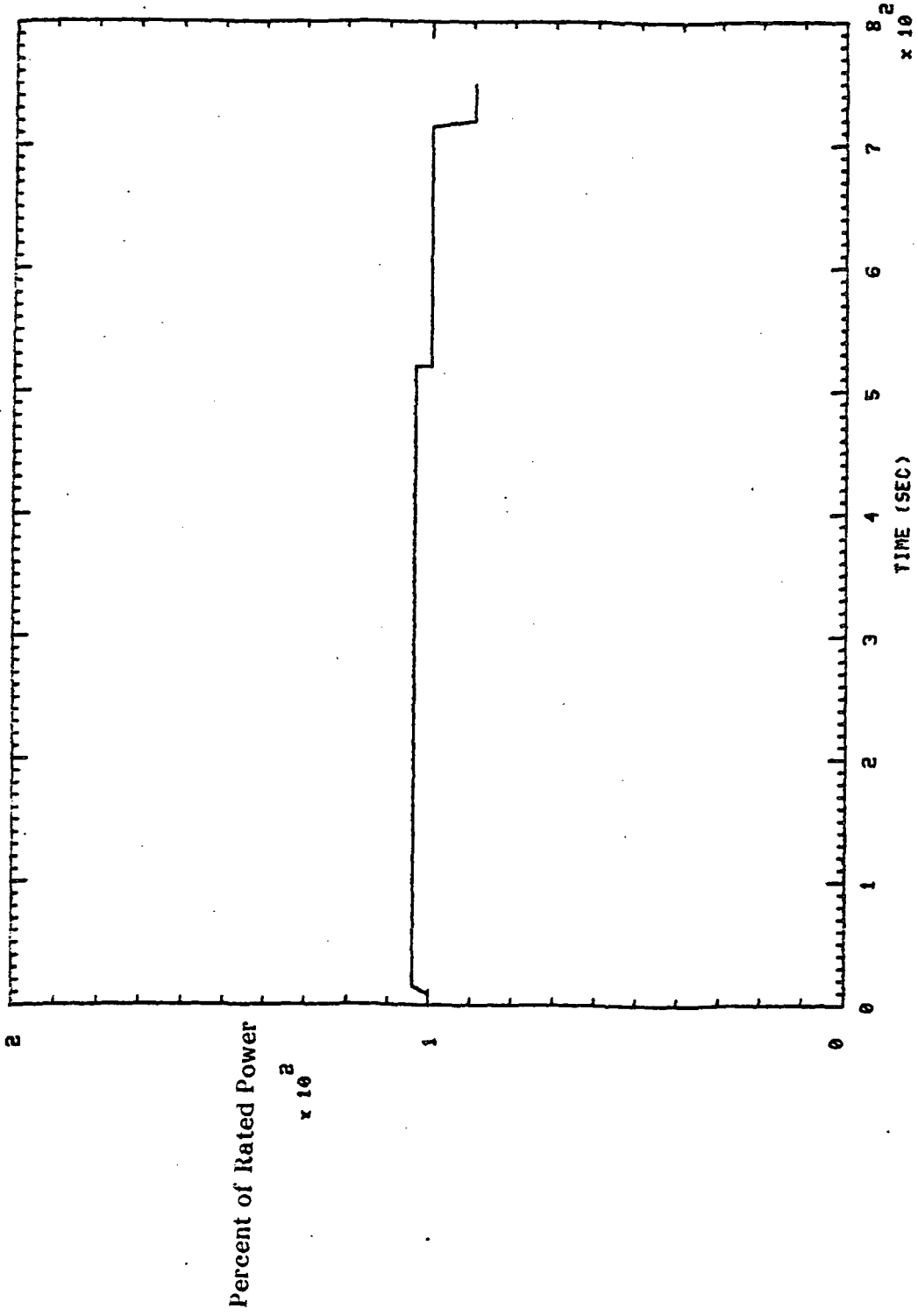


P SQ/HZ

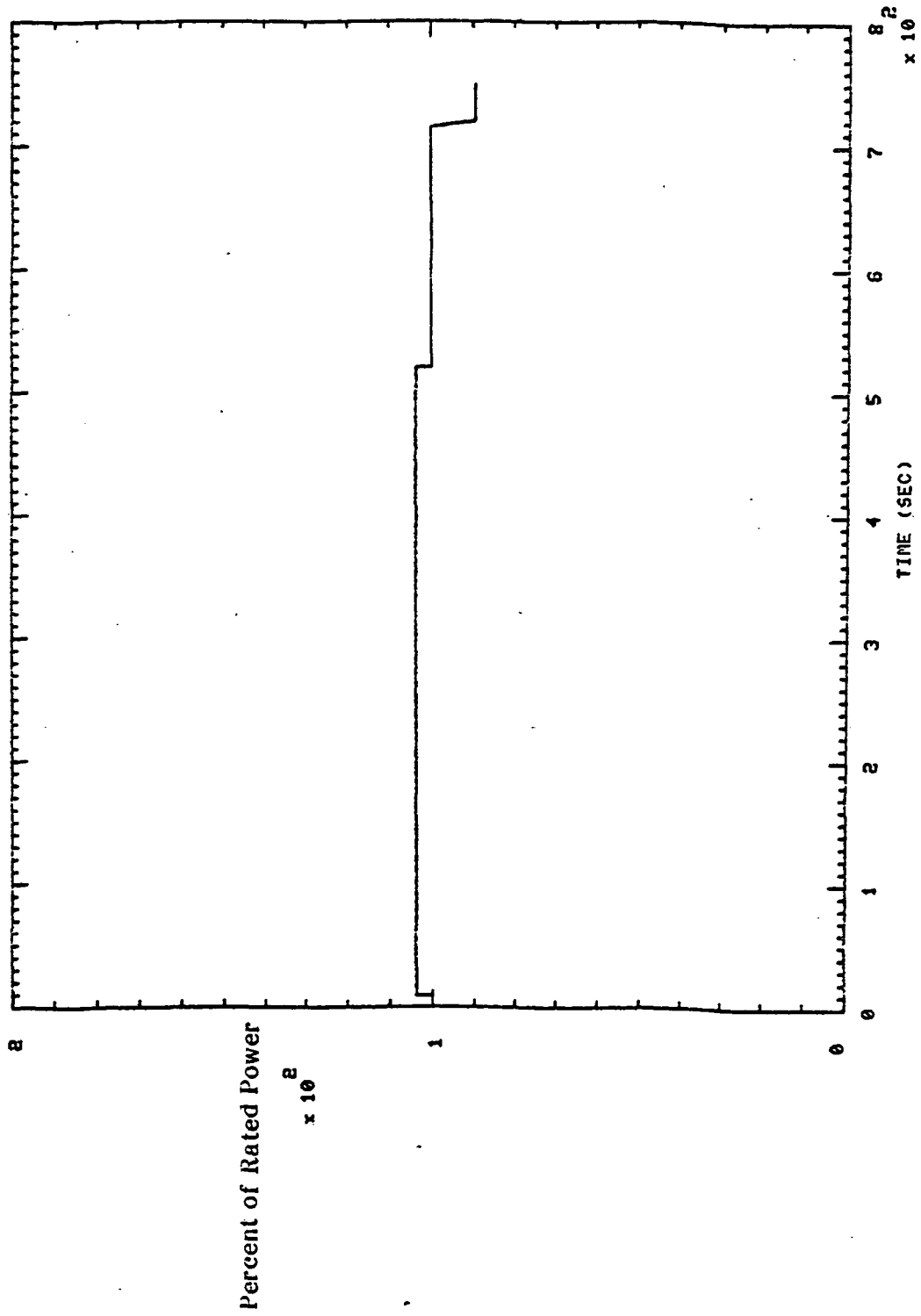
901407 HFFP BAL CAU PR S+ 430.0



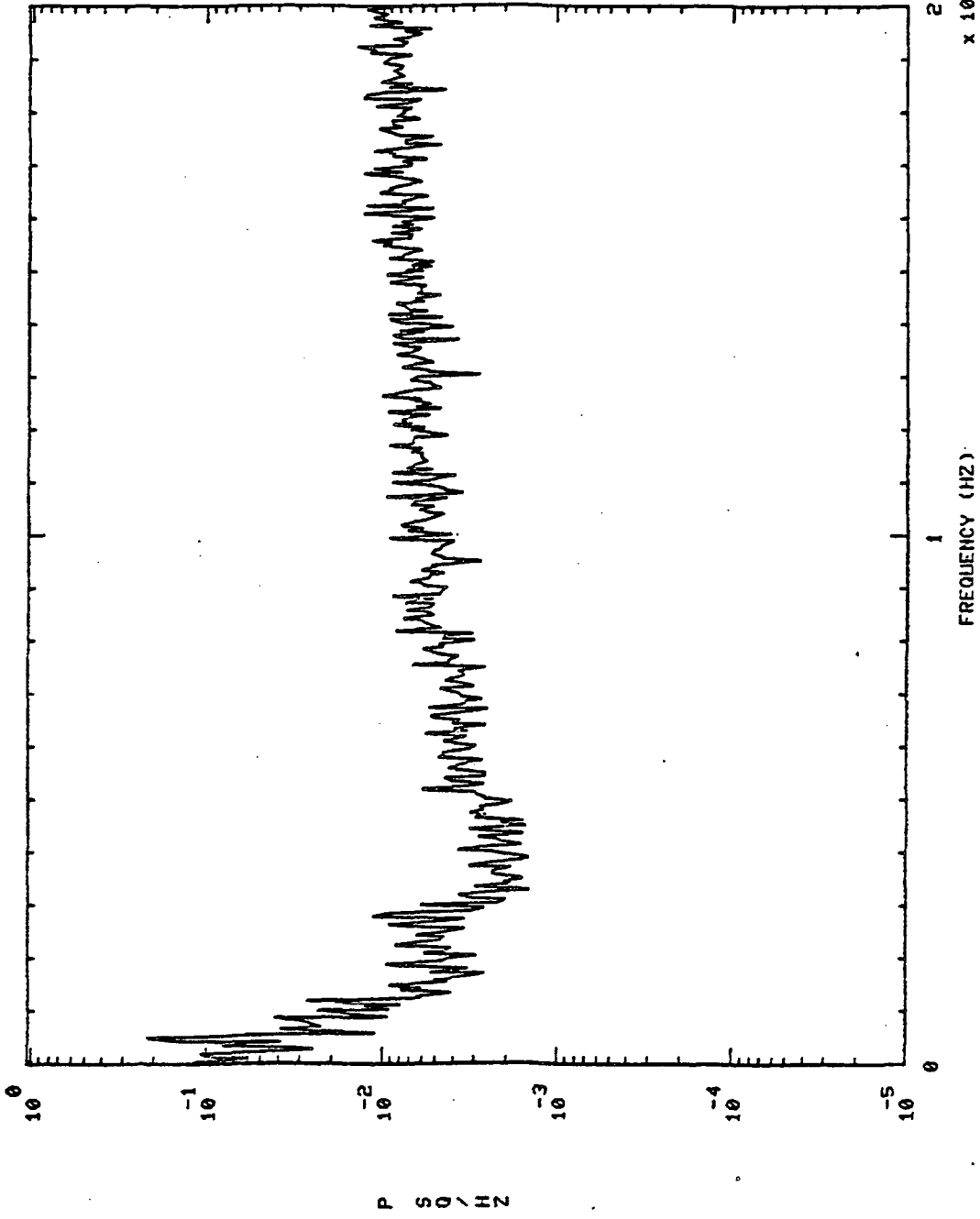
901408 THRUST (UNFILTERED )



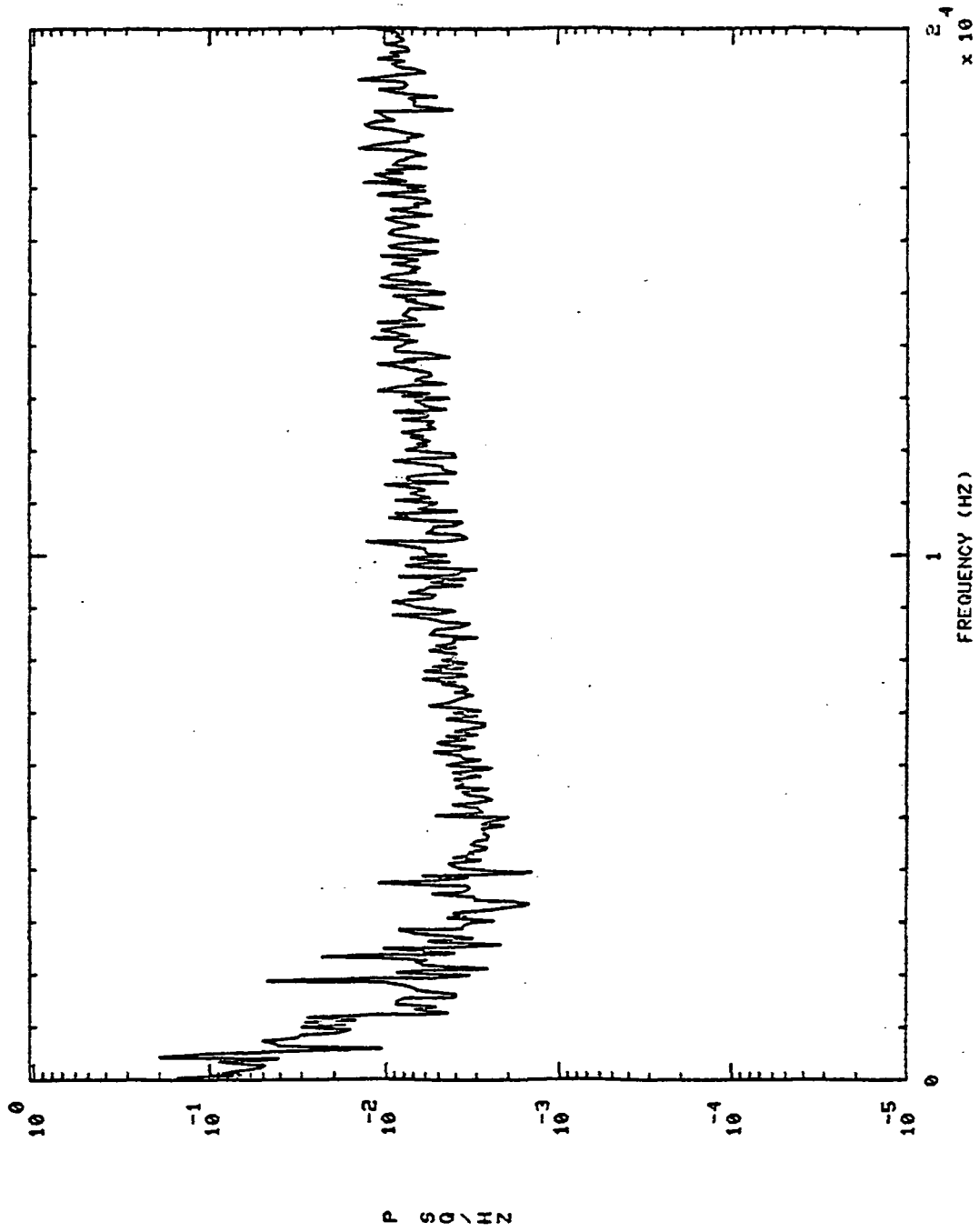
901409 THRUST (UNFILTERED)



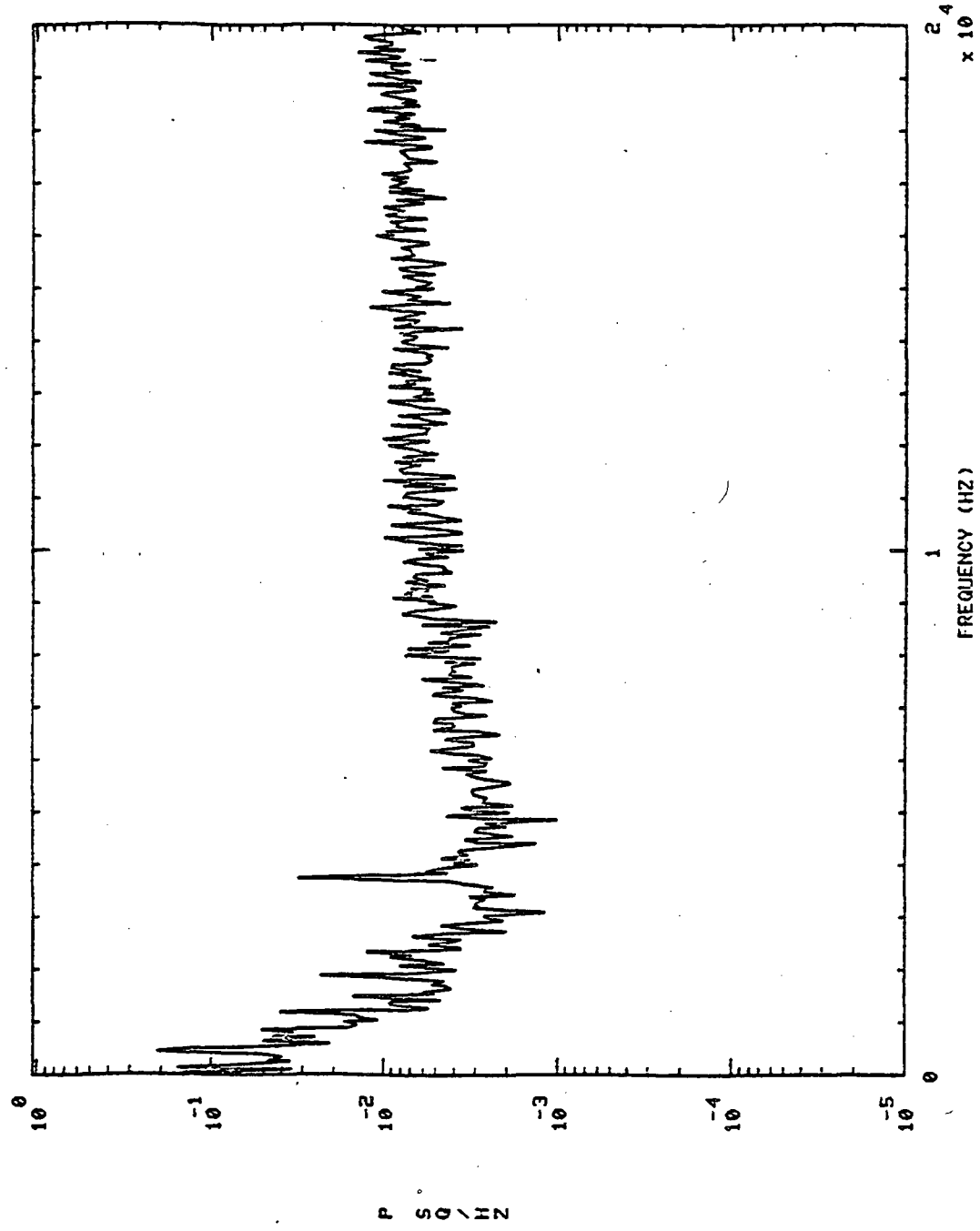
901409 HPOP BAL CAU PR2 S+ 15.0



901409 HPOP BAL CAU PR2 S+ 240.0



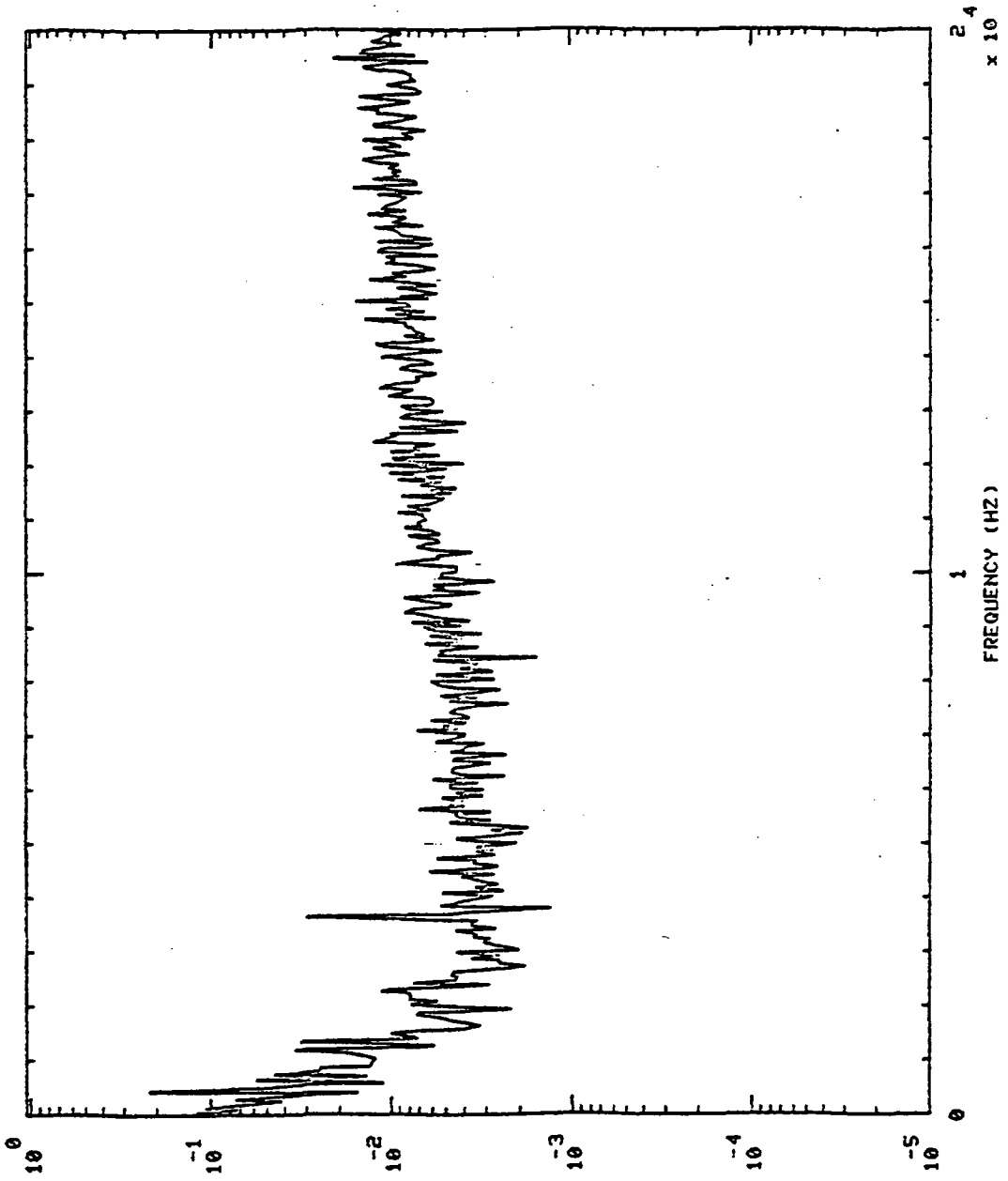
901409 HPOP BAL CAU PR2 S+ 500.0





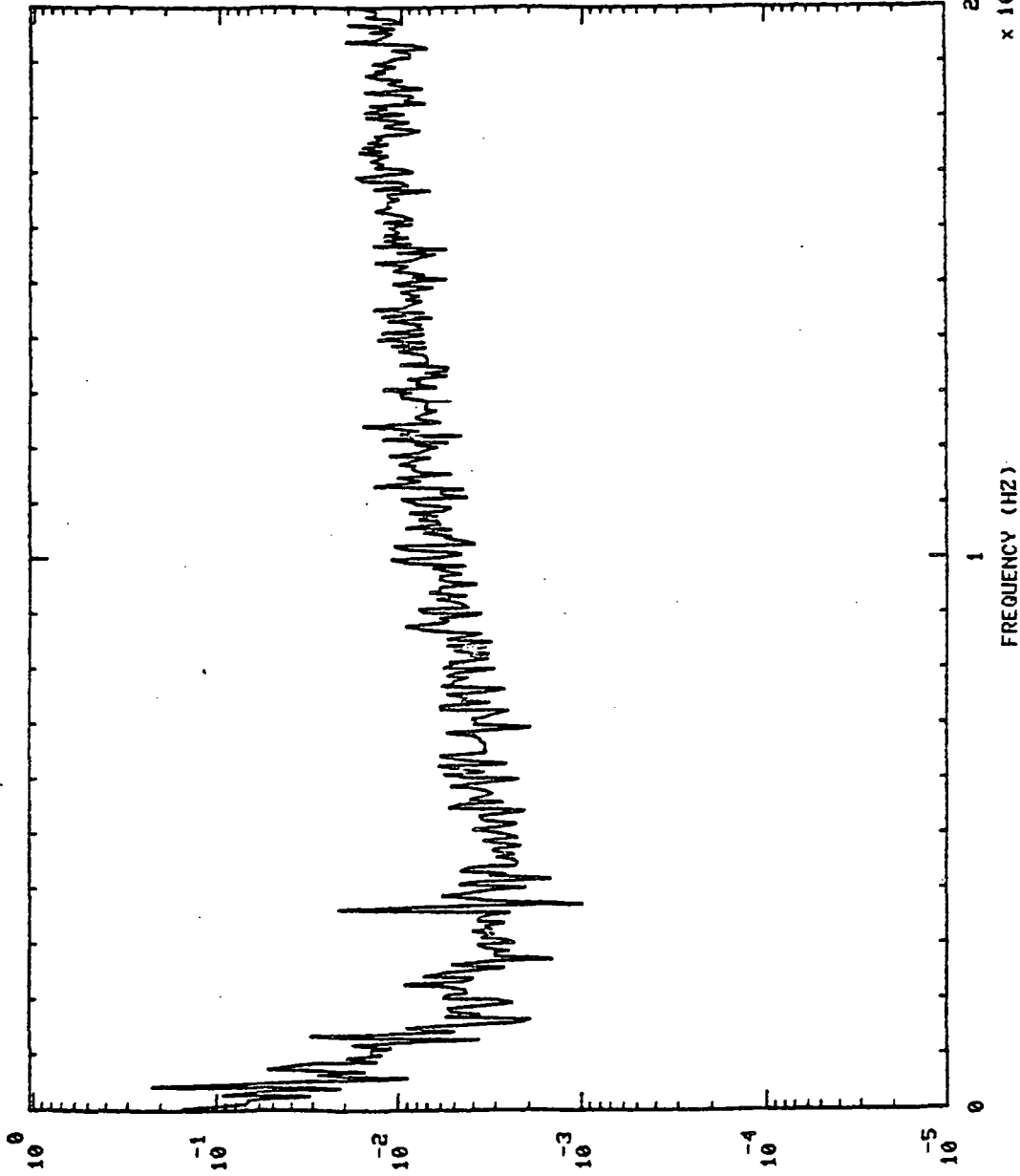
S+ 525.0

901469 HPOP BAL CAU PR2



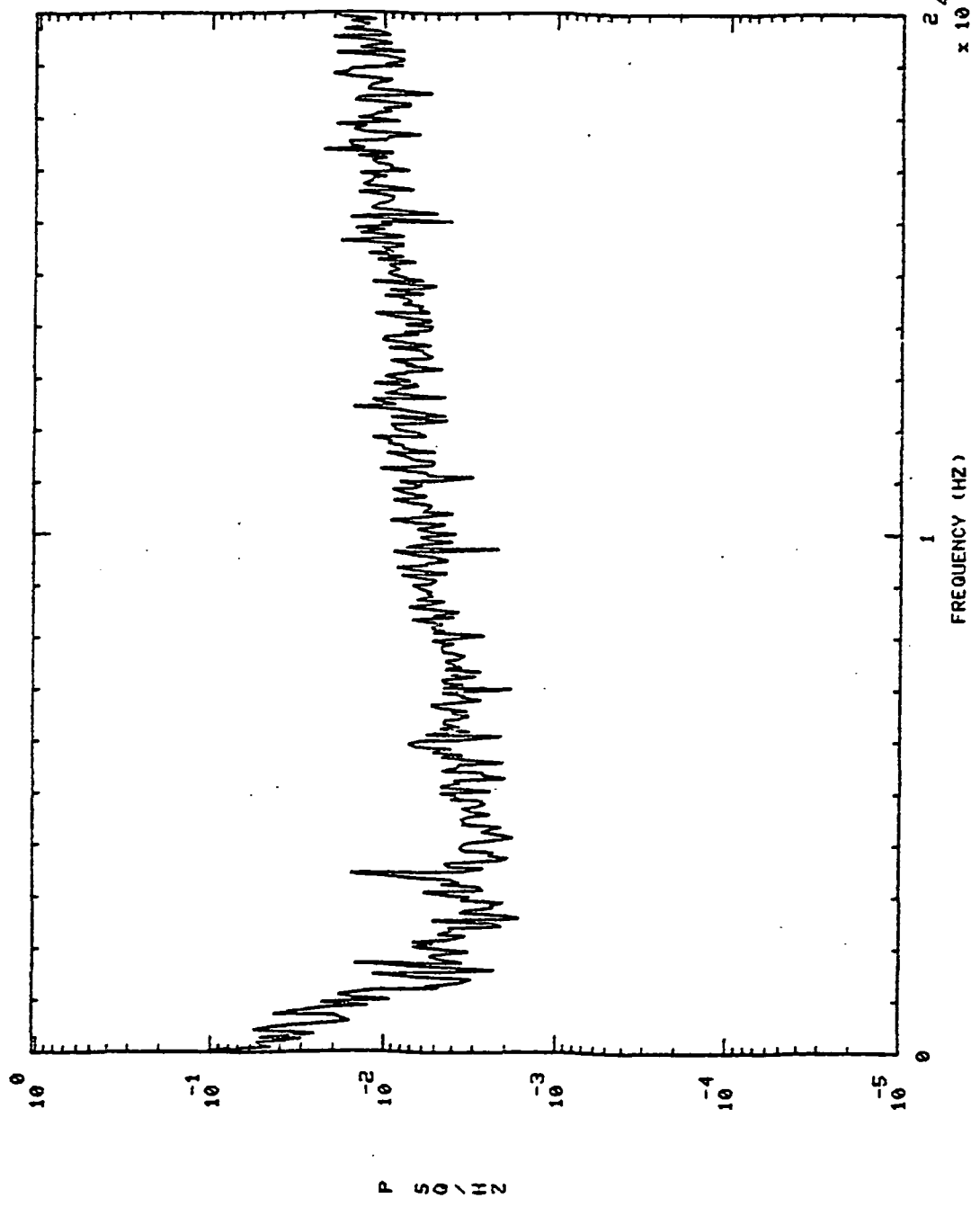
P S D / H Z

901409 HPOP BAL CAU PR2 S+ 705.0

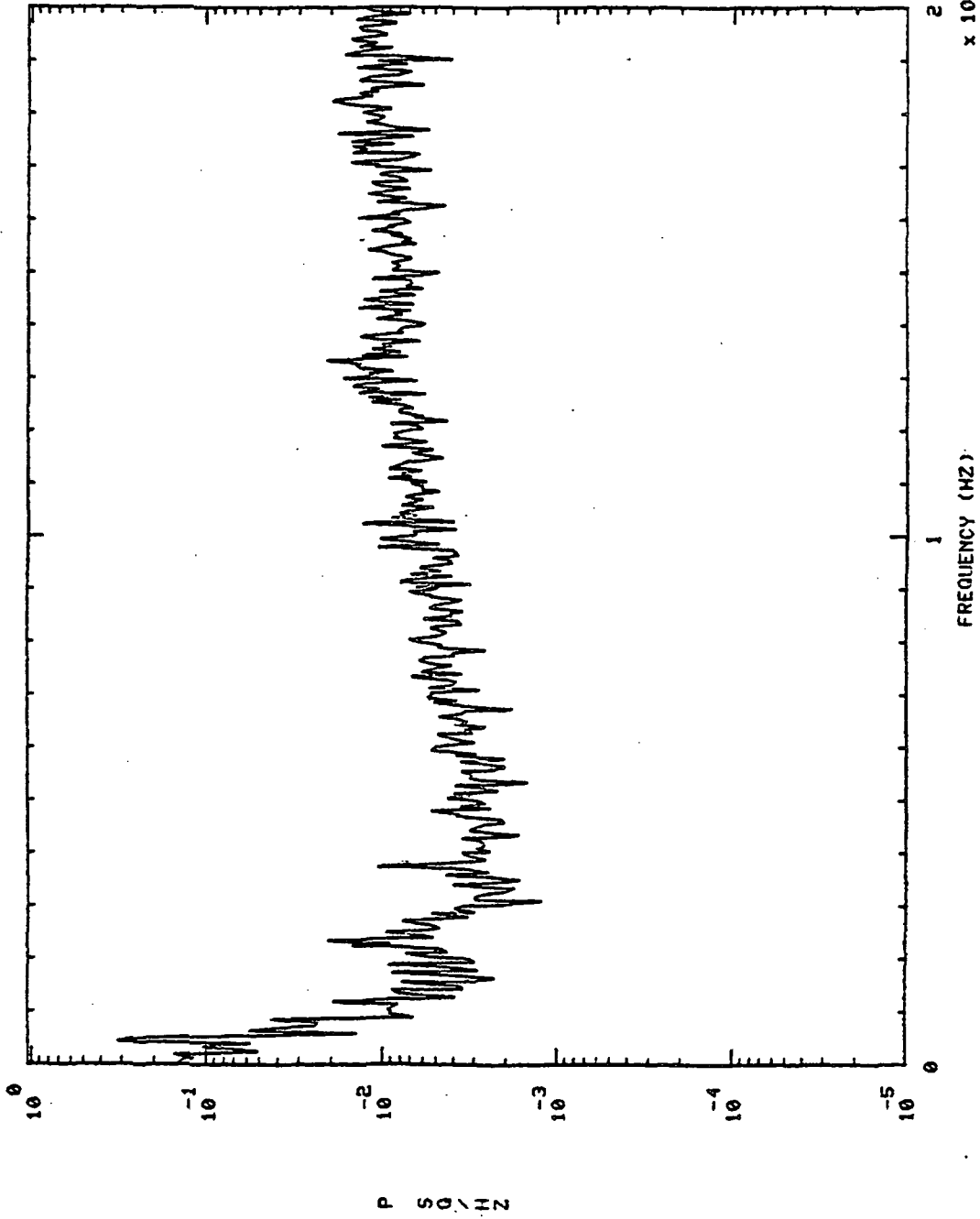


P S D \ HZ

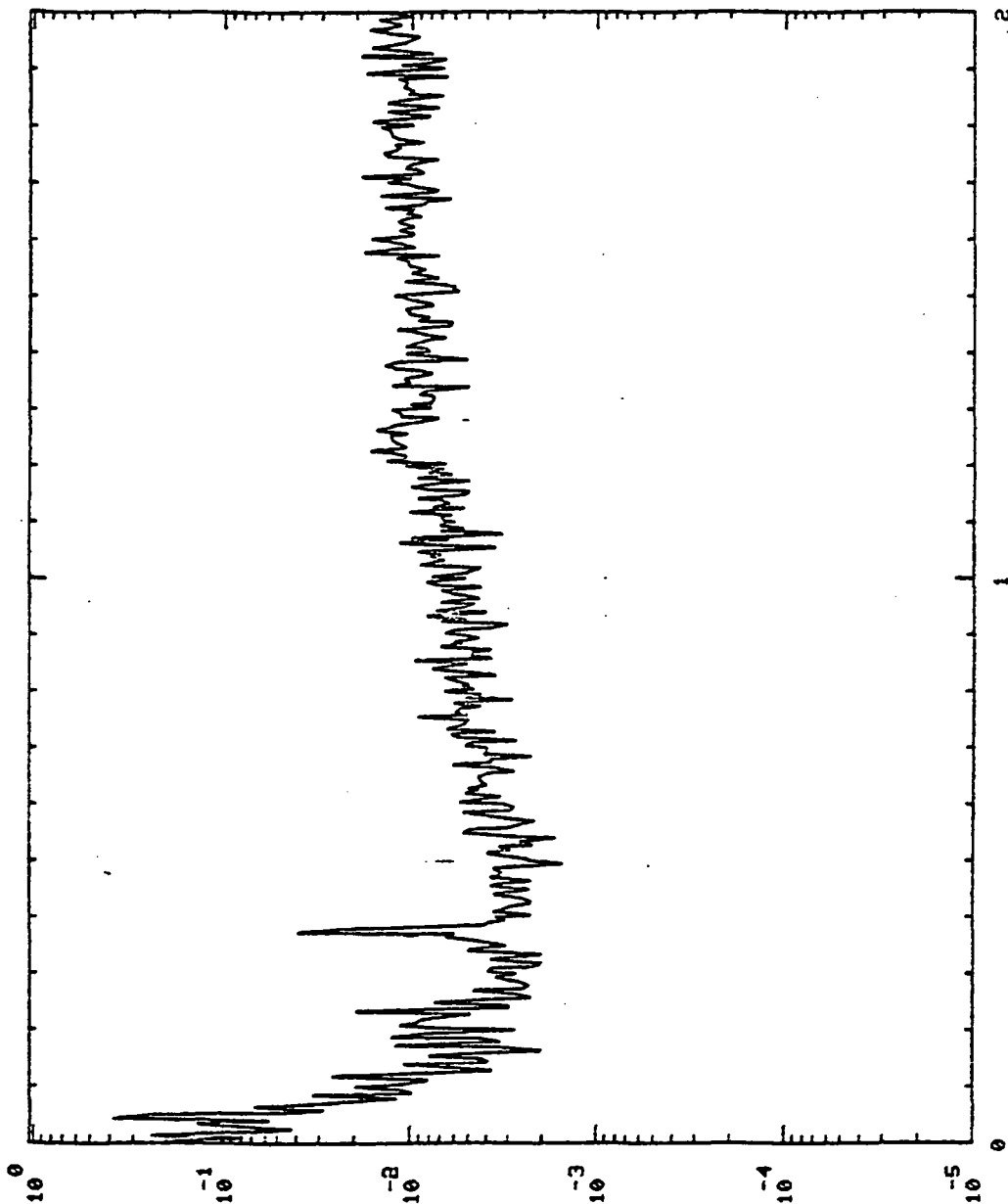
901409 HPOP BAL CAU PR2 S+ 725.0



901409 NPOP BAL CAU PR1 St 15.0



901409 HPOP BAL CAU PRI S+ 240.0

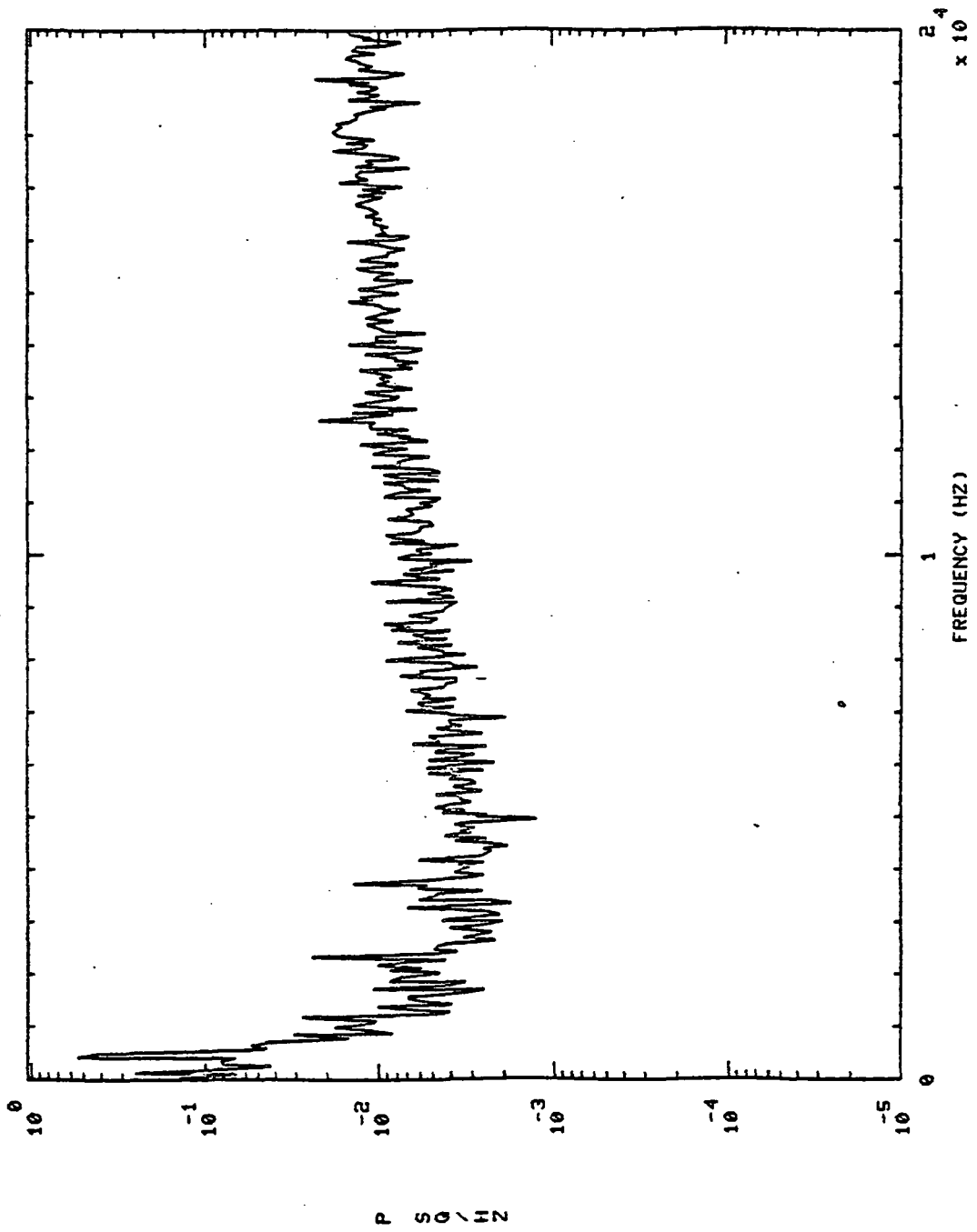


PSD \ HZ

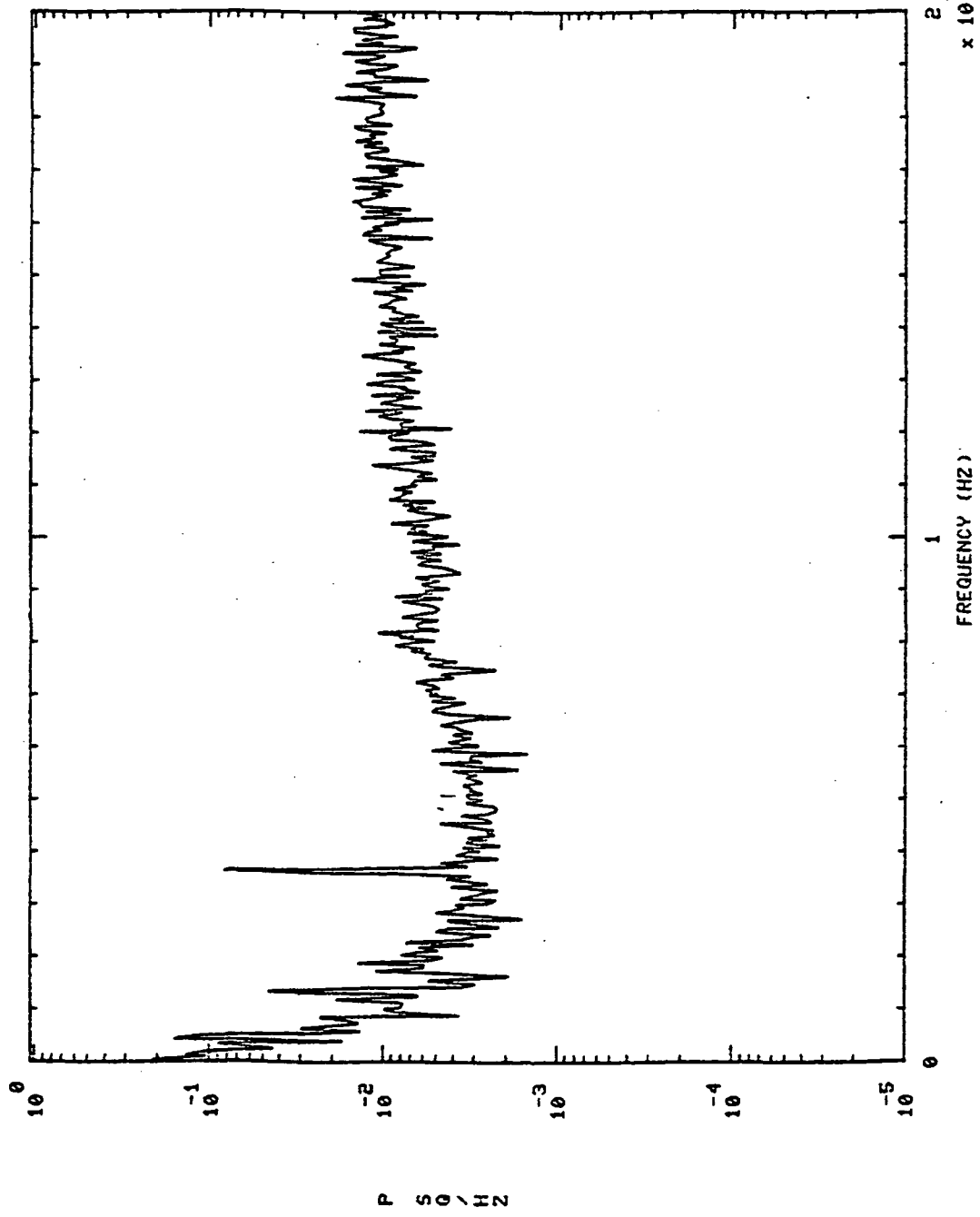
FREQUENCY (HZ)

x 10<sup>4</sup>

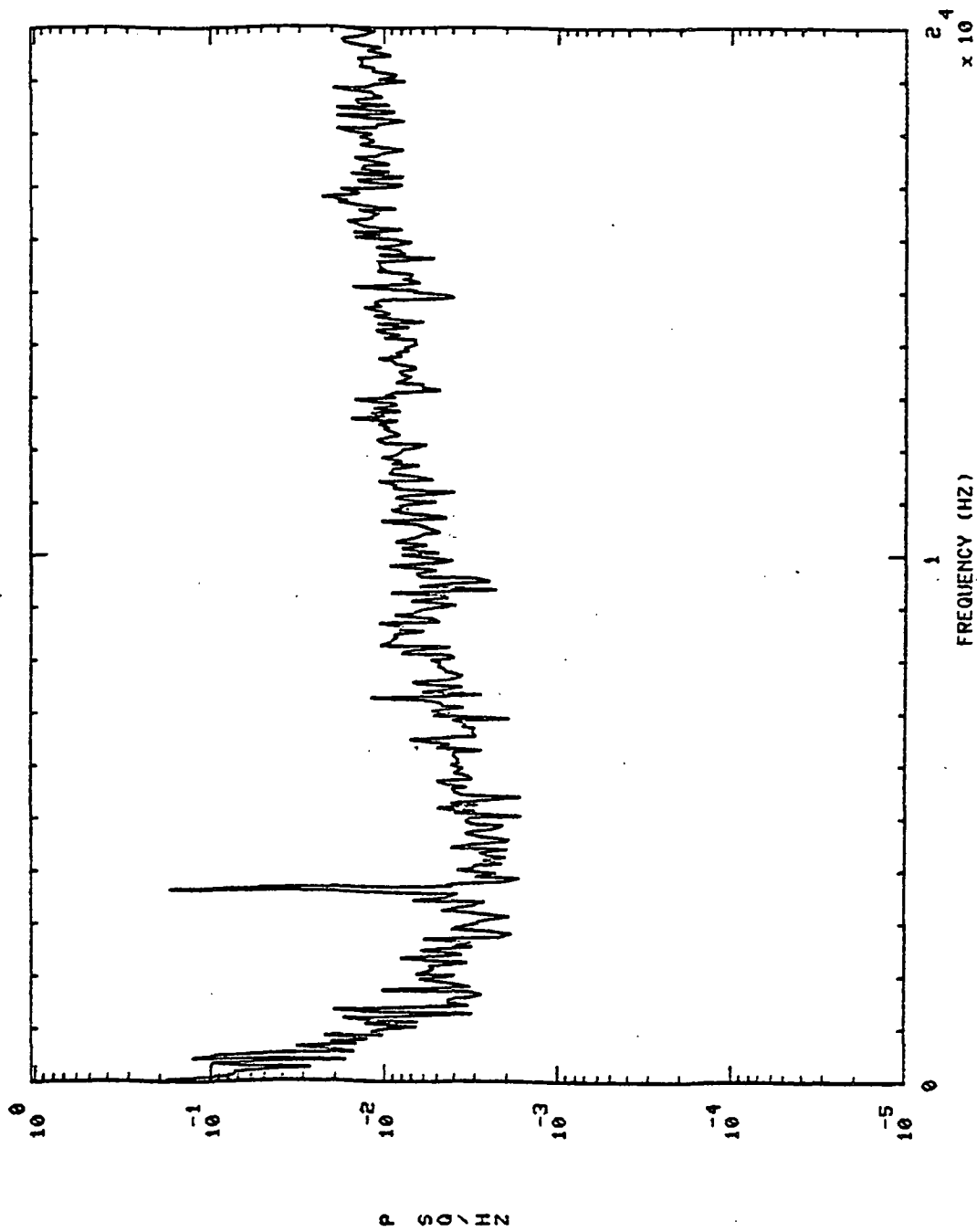
901409 HPOP BAL CAV PR1 S+ 500.0



901409 HPOP BAL CAU PR1 S+ 525.0



901409 HIPOP BAL CAU PR1 S+ 705.0

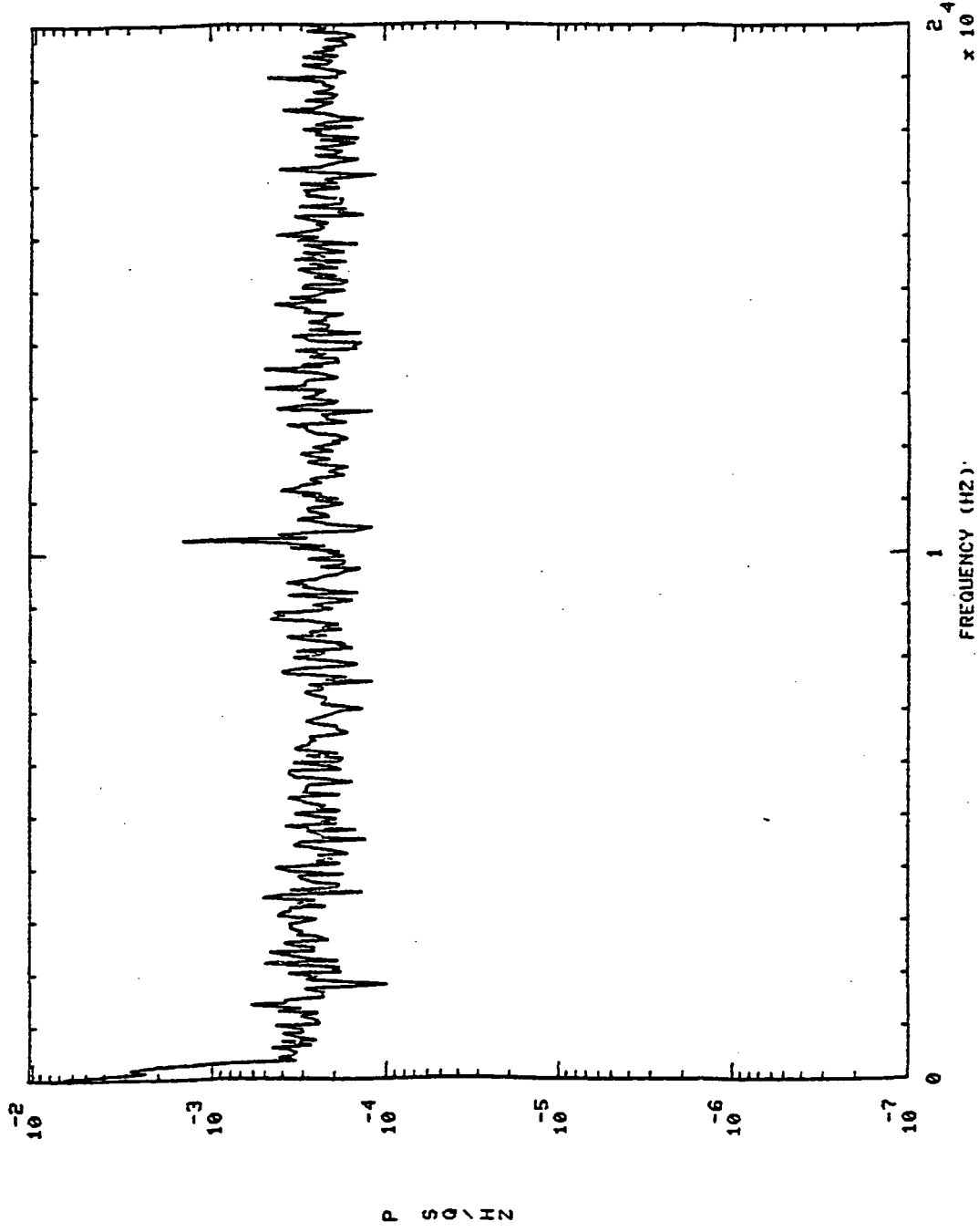




S+ 725.0

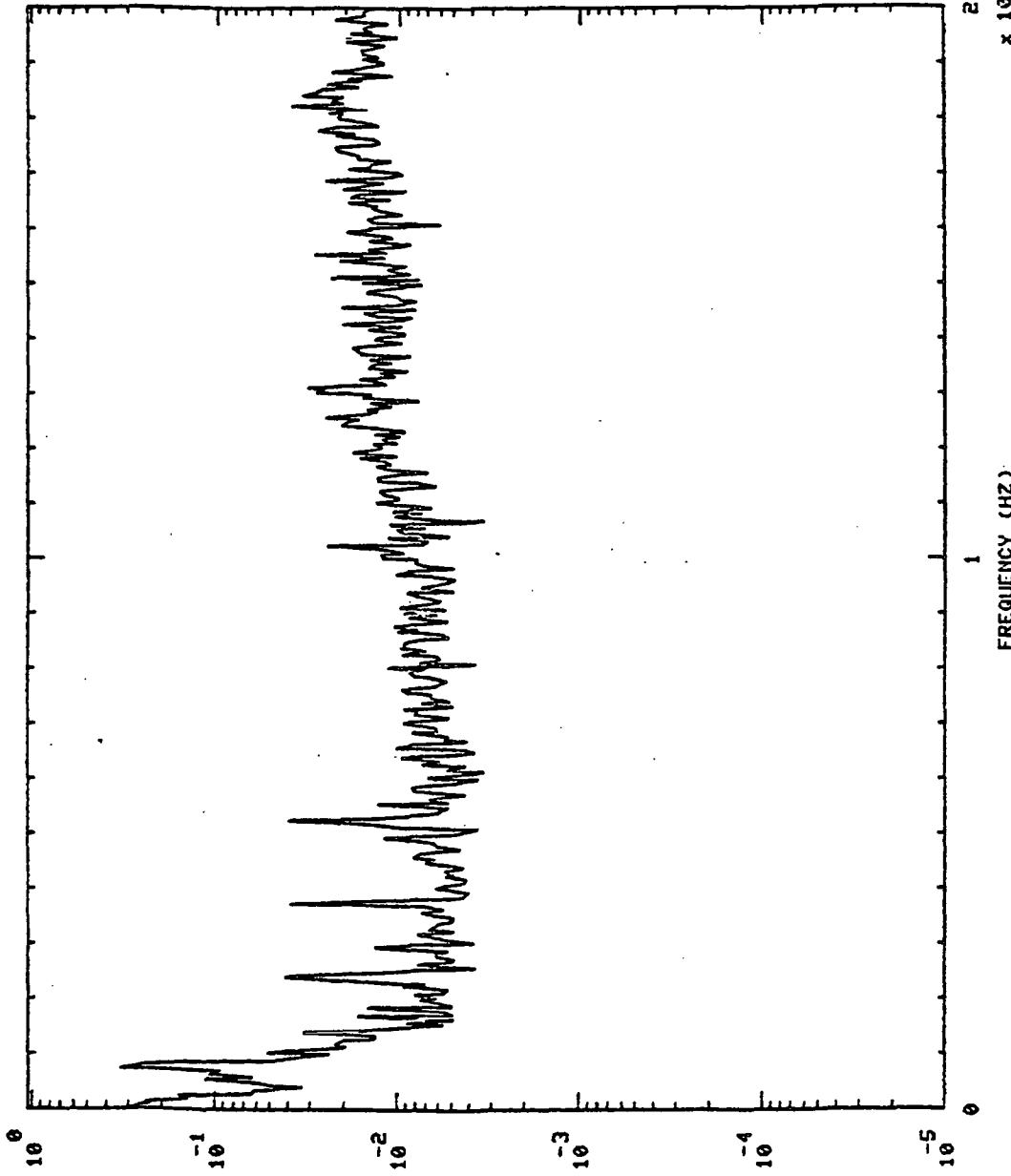
HPOP BAL CAU PRI

901409



S+ 15.0

901409 OPB PC PR



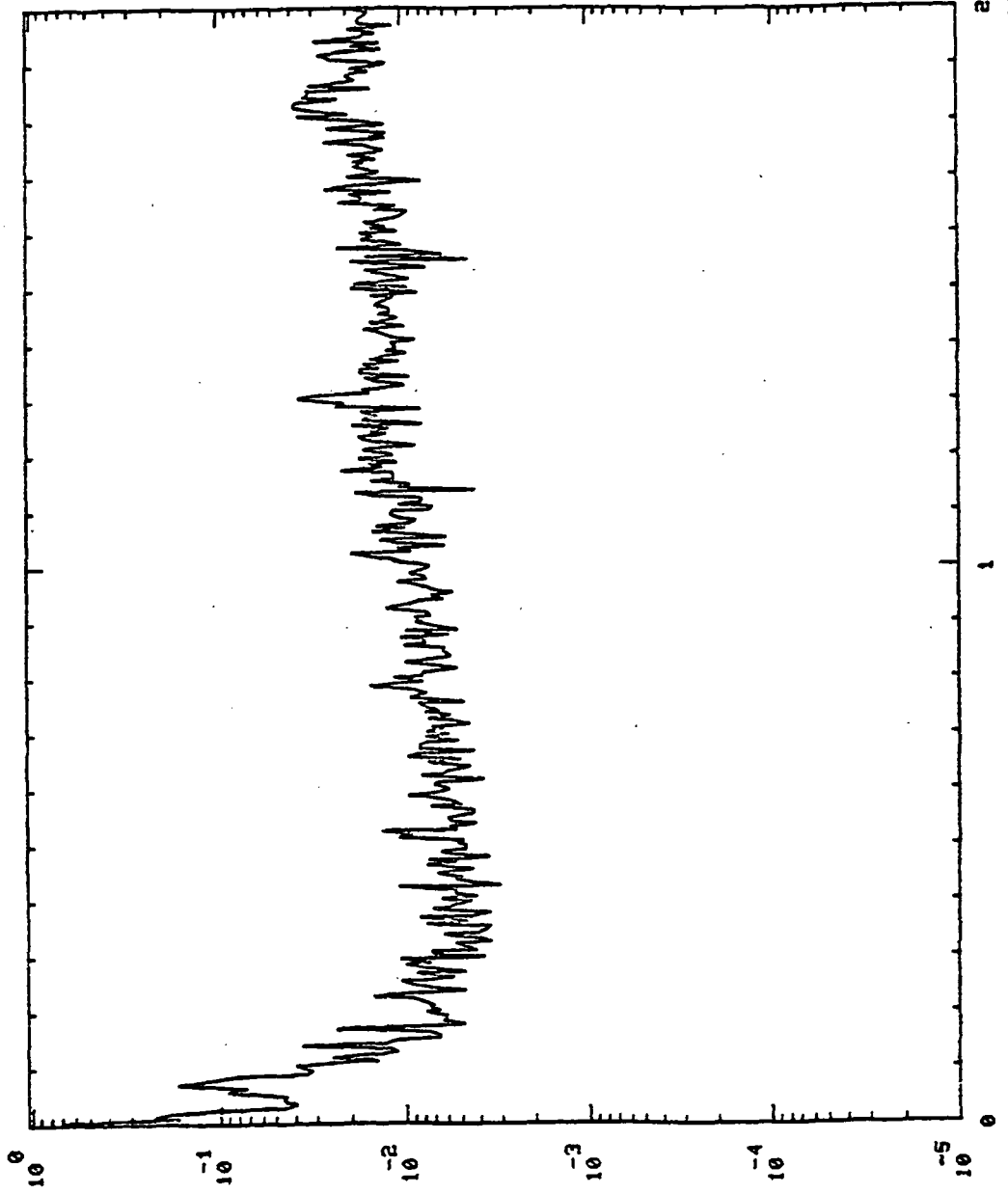
P S D

$10^4$   
 $\times 10$

FREQUENCY (HZ)

St 240.0

901489 OPB PC PR



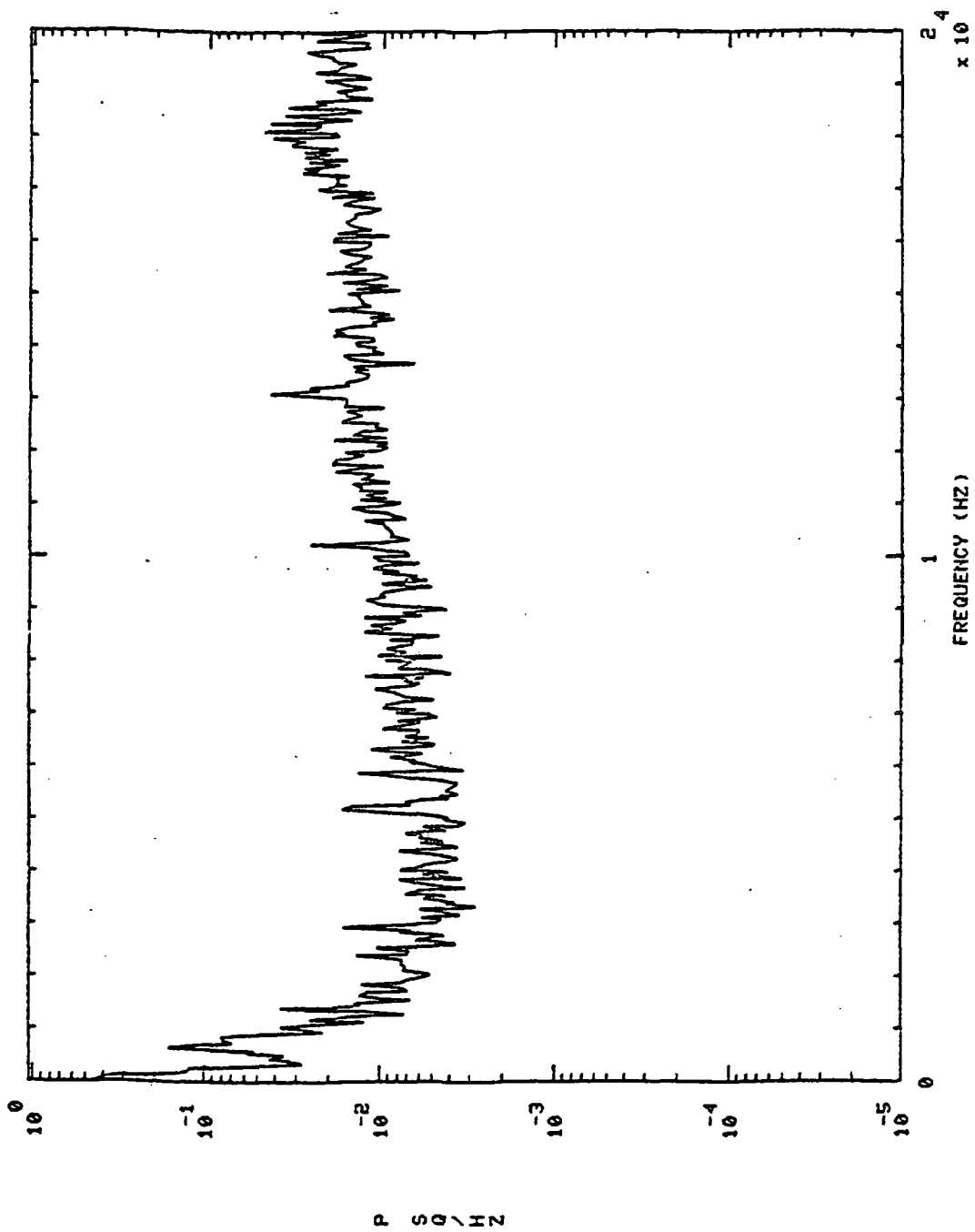
P S G \ H Z

FREQUENCY (H Z)

$\times 10^4$

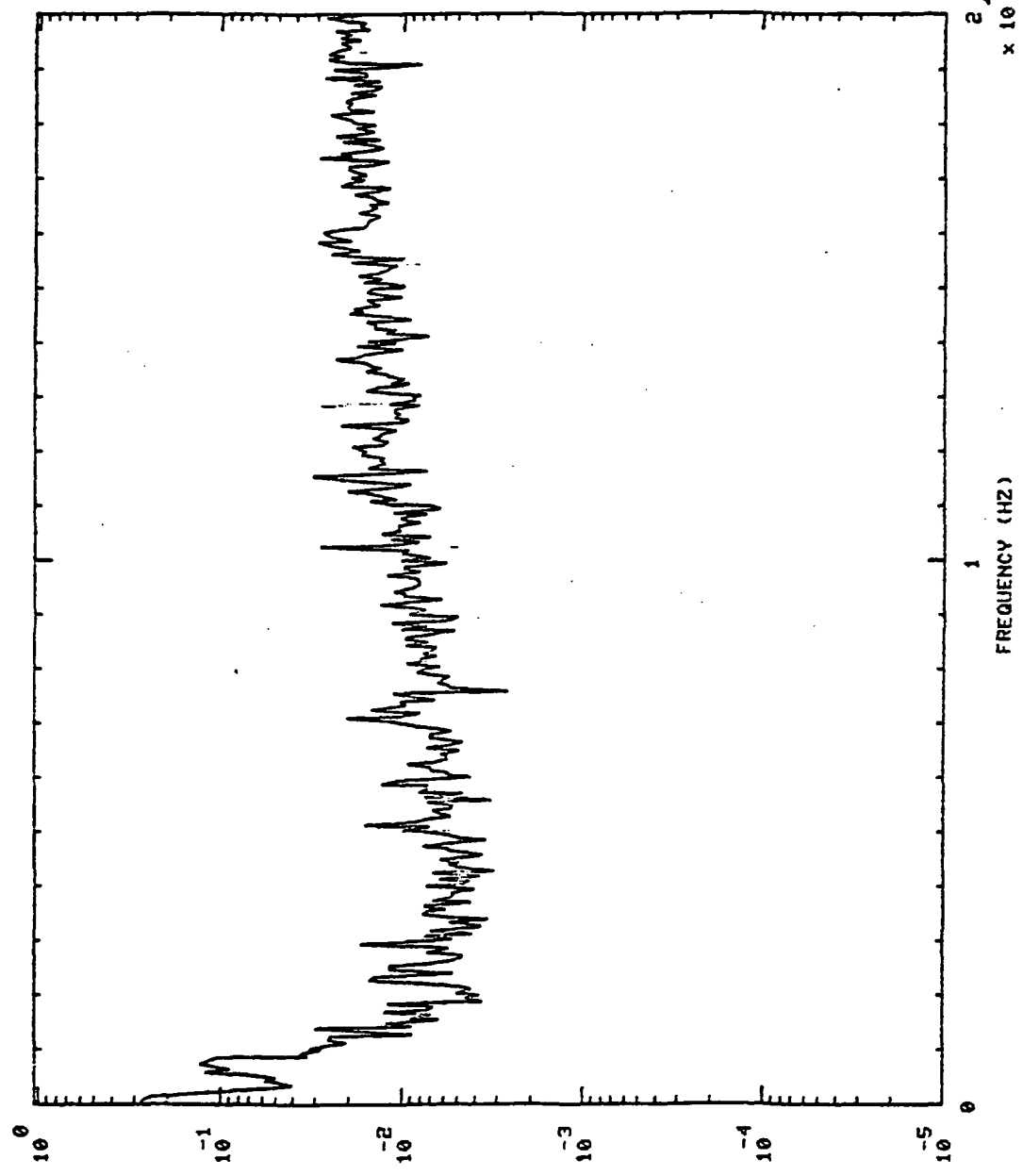
S+ 500.0

901409 OPB PC PR



S+ 525.0

901409 OPB PC PR

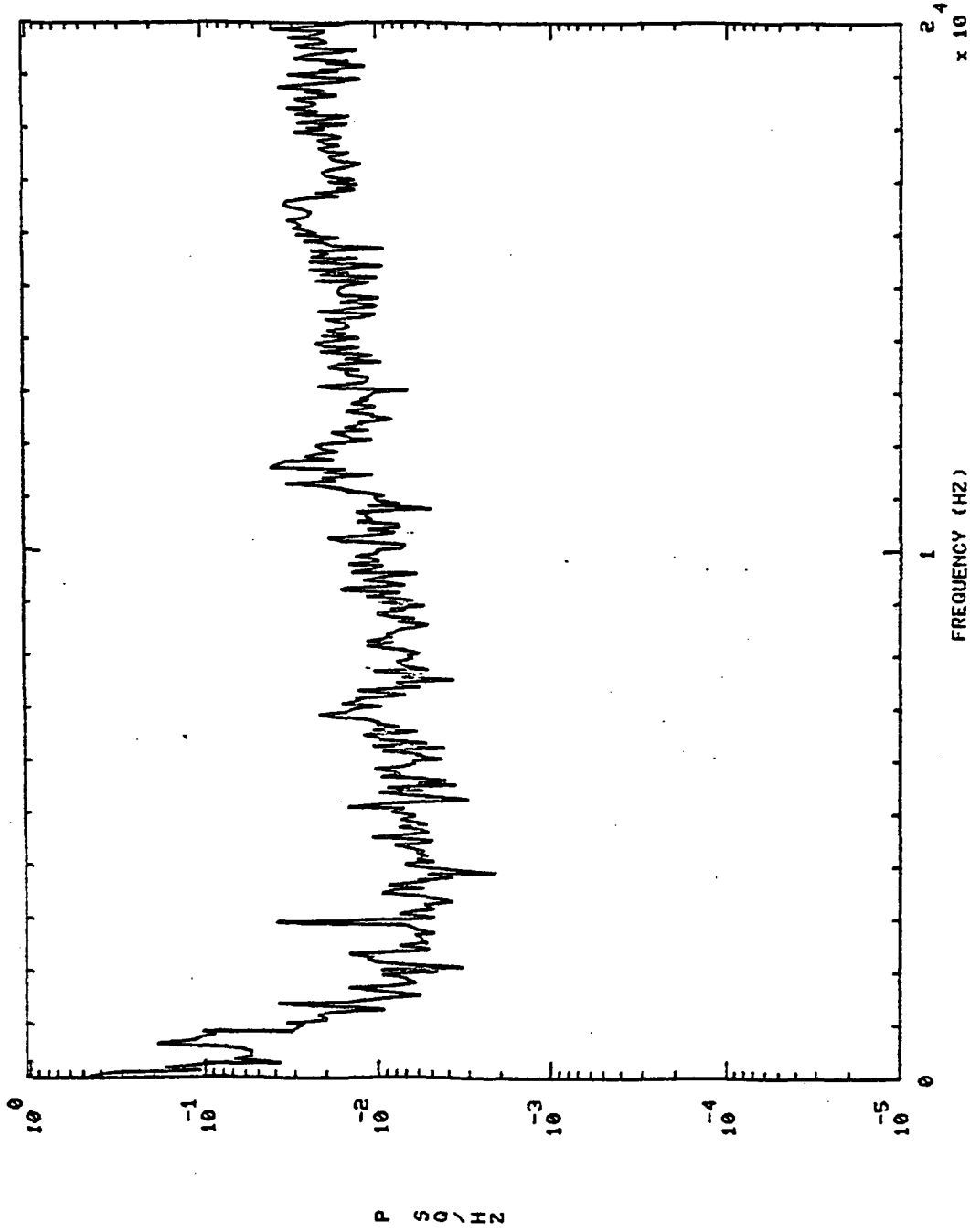


P S D \ H Z

FREQUENCY (HZ) x 10<sup>4</sup>

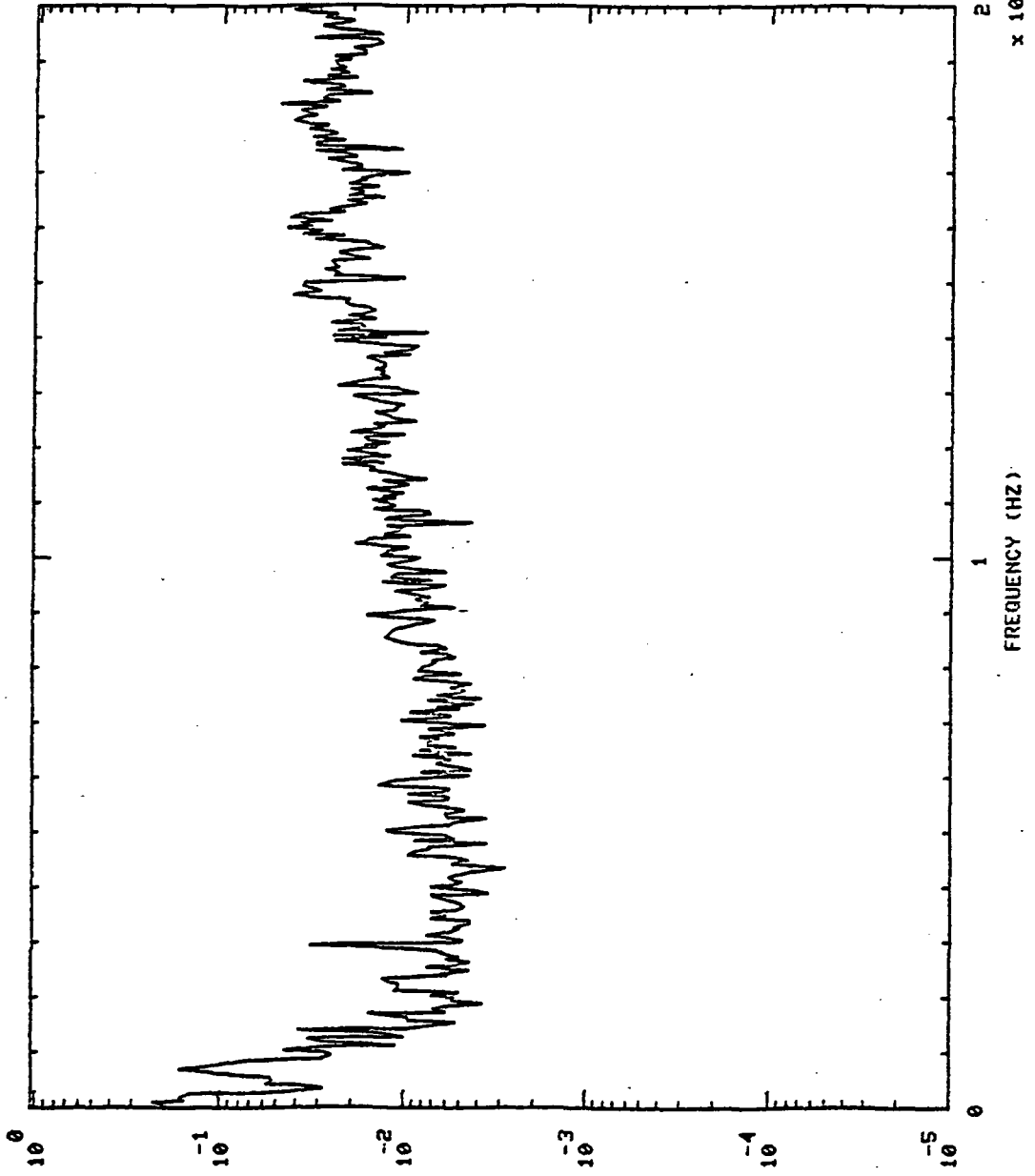
S+ 705.0

901409 OPB PC PR



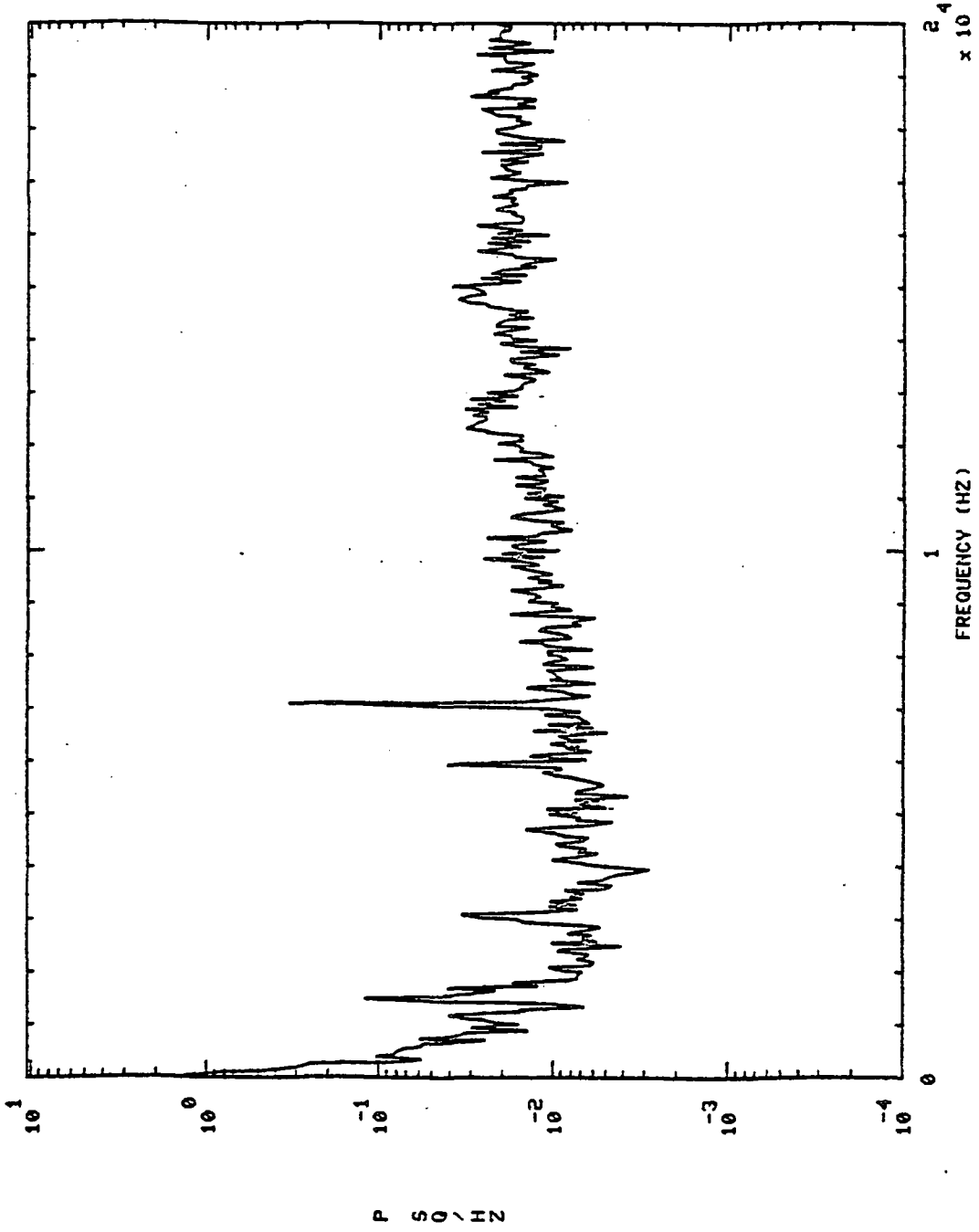
901409 OPB PC PR

S+ 725.0



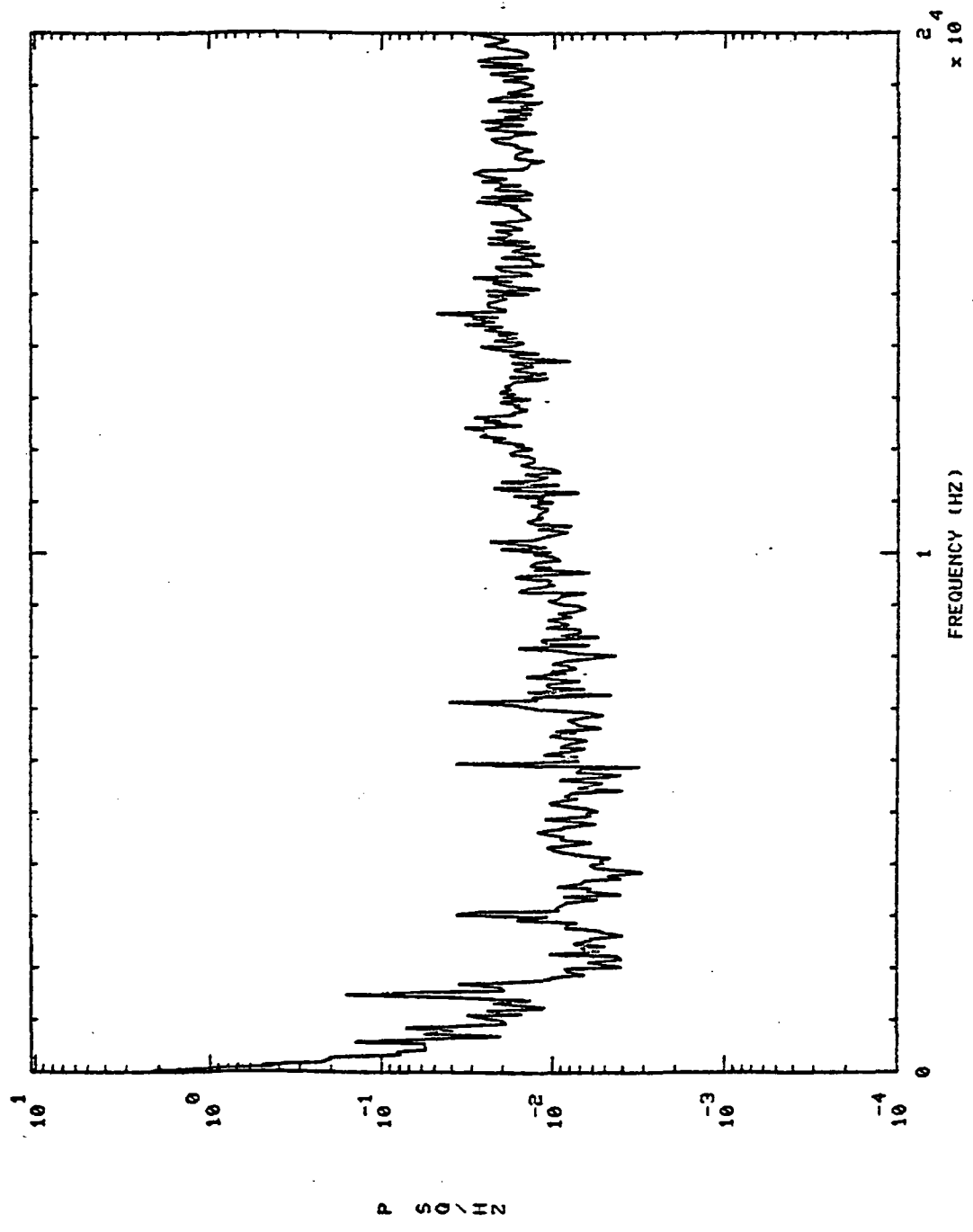
P SO\IN

901409 HPFP BAL CAU PR S+ 15.0





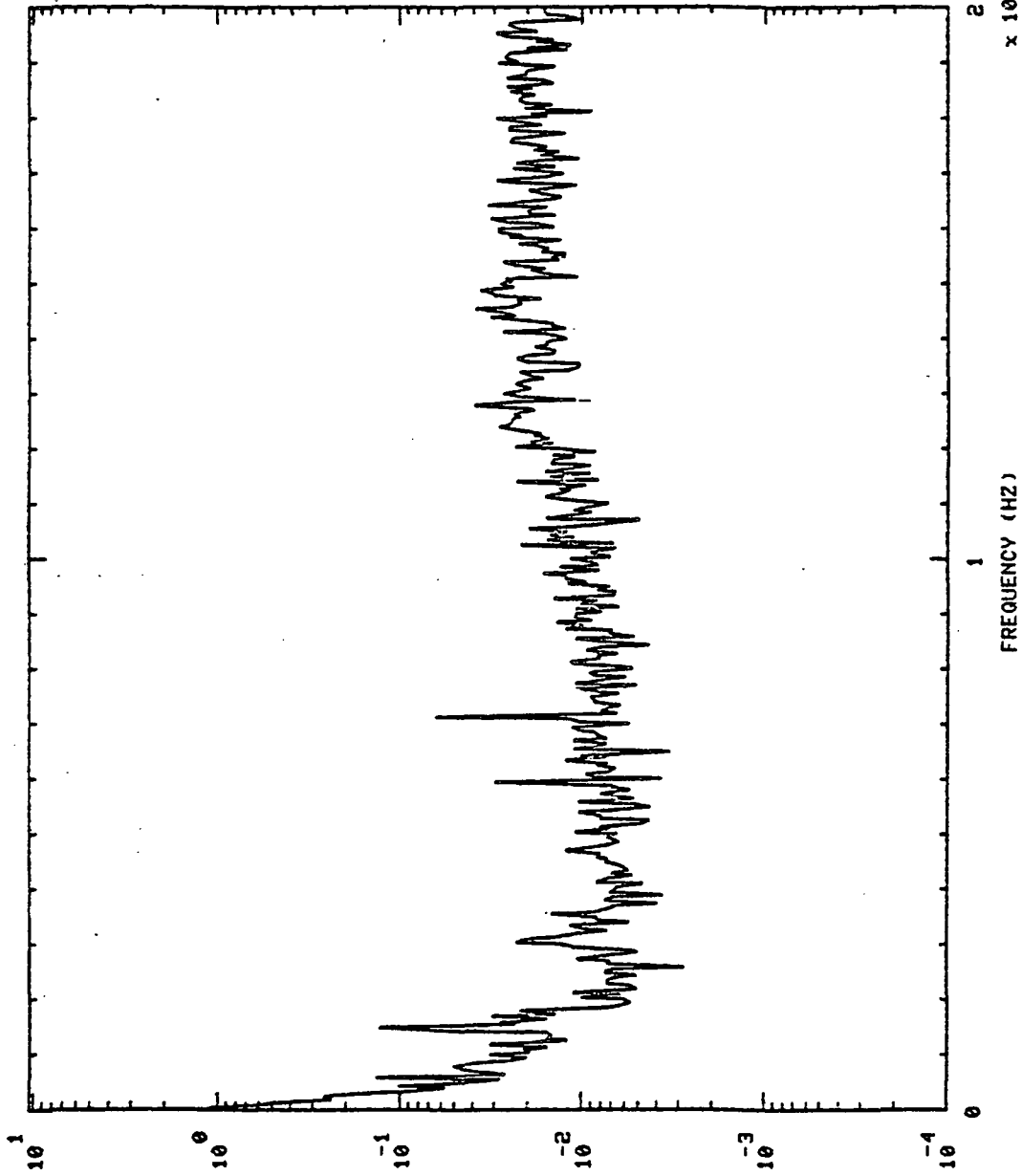
901409 HPFP BAL CAU PR S+ 240.0



S+ 500.0

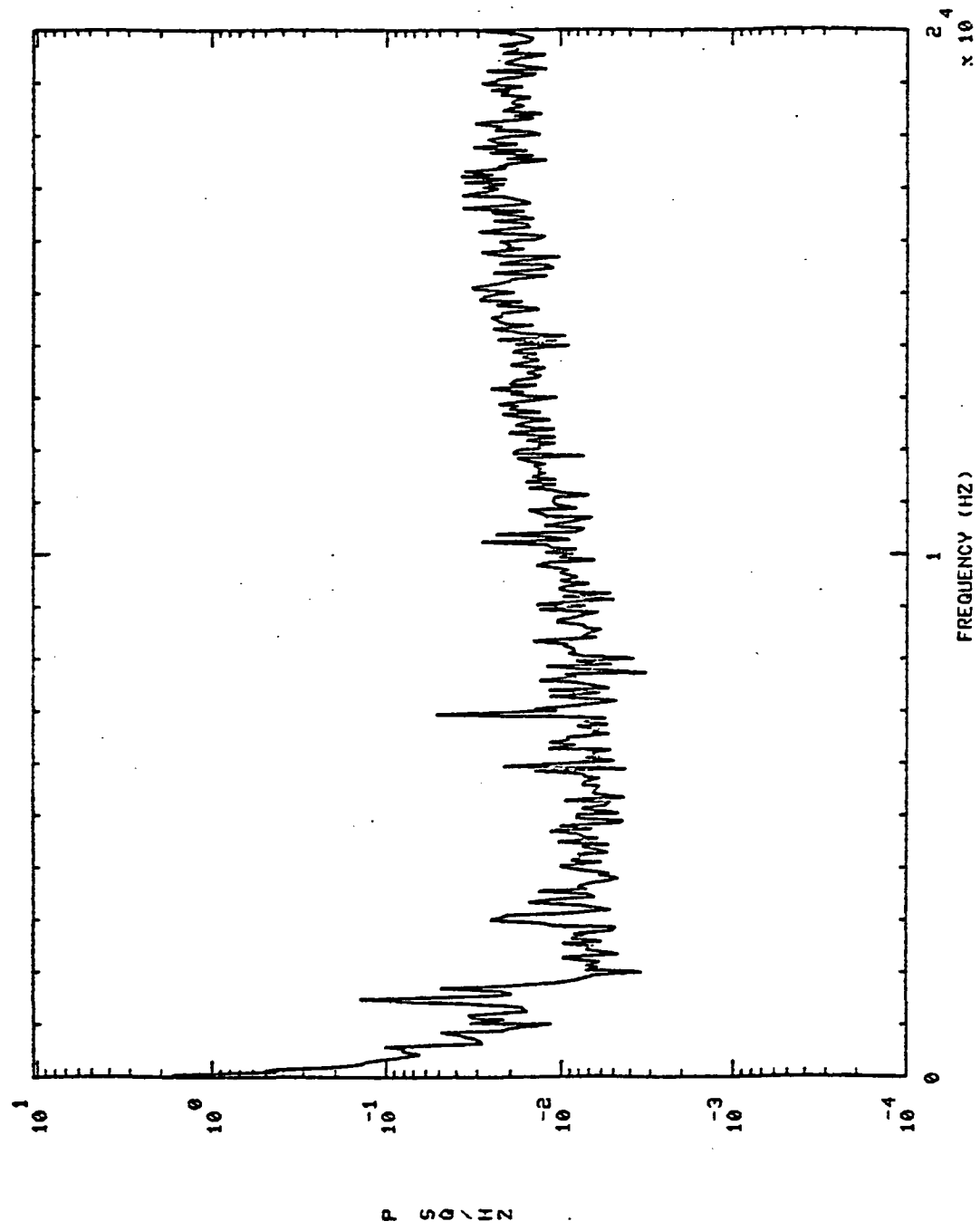
HPFP BAL CAU PR

901409



S+ 525.0

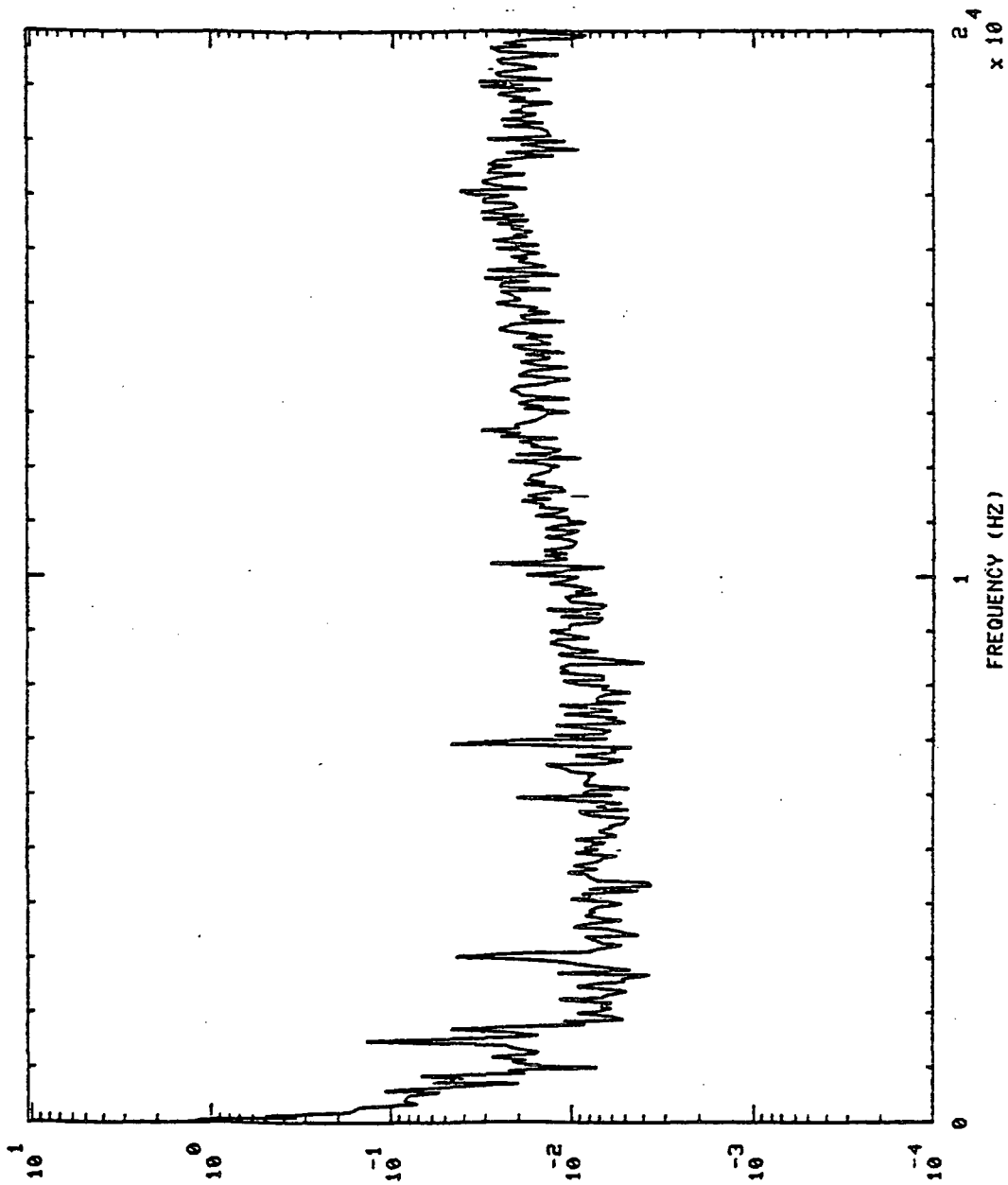
901409 HPFF BAL CAU PR



S+ 705.0

HPFP BAL CAU PR

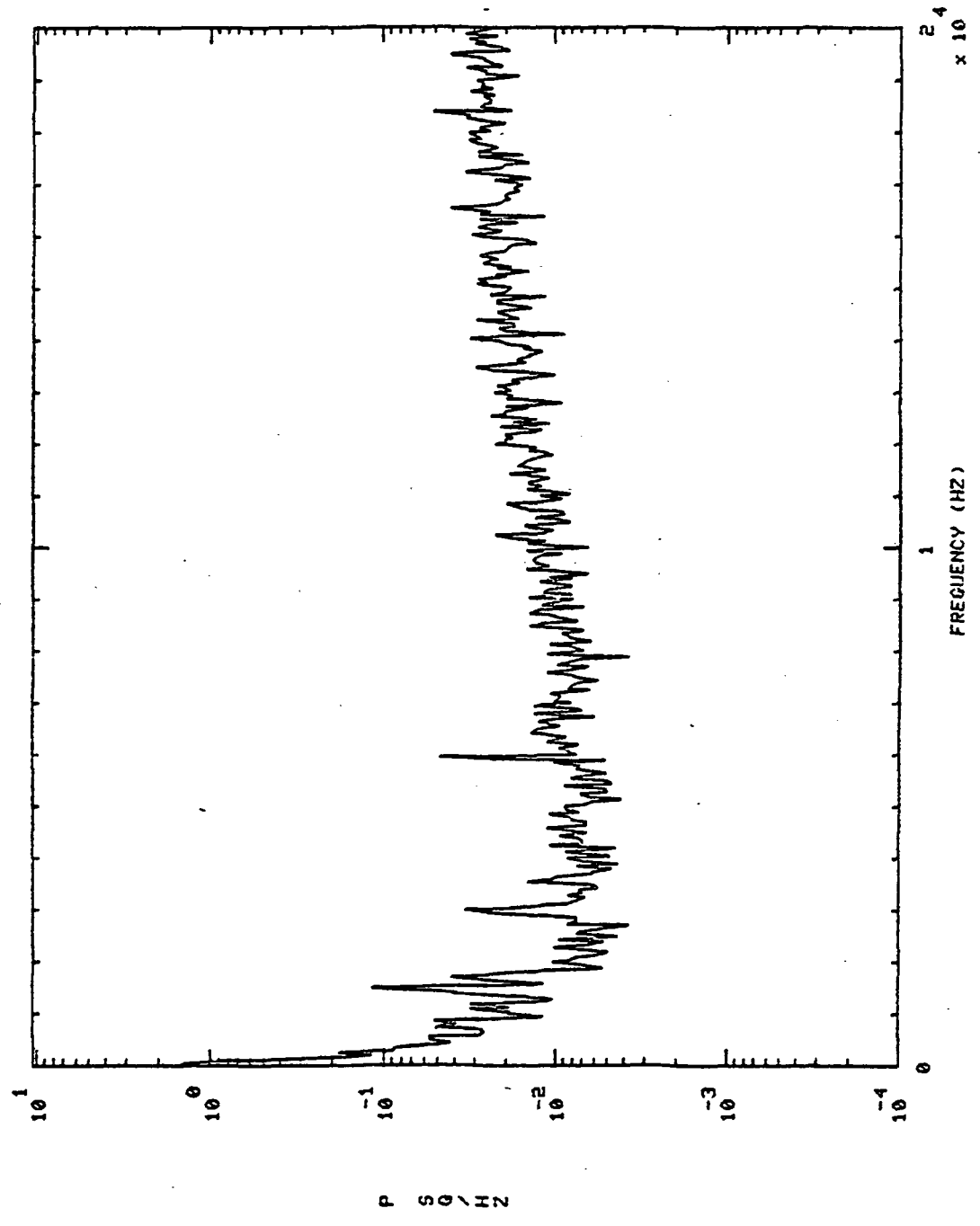
901409



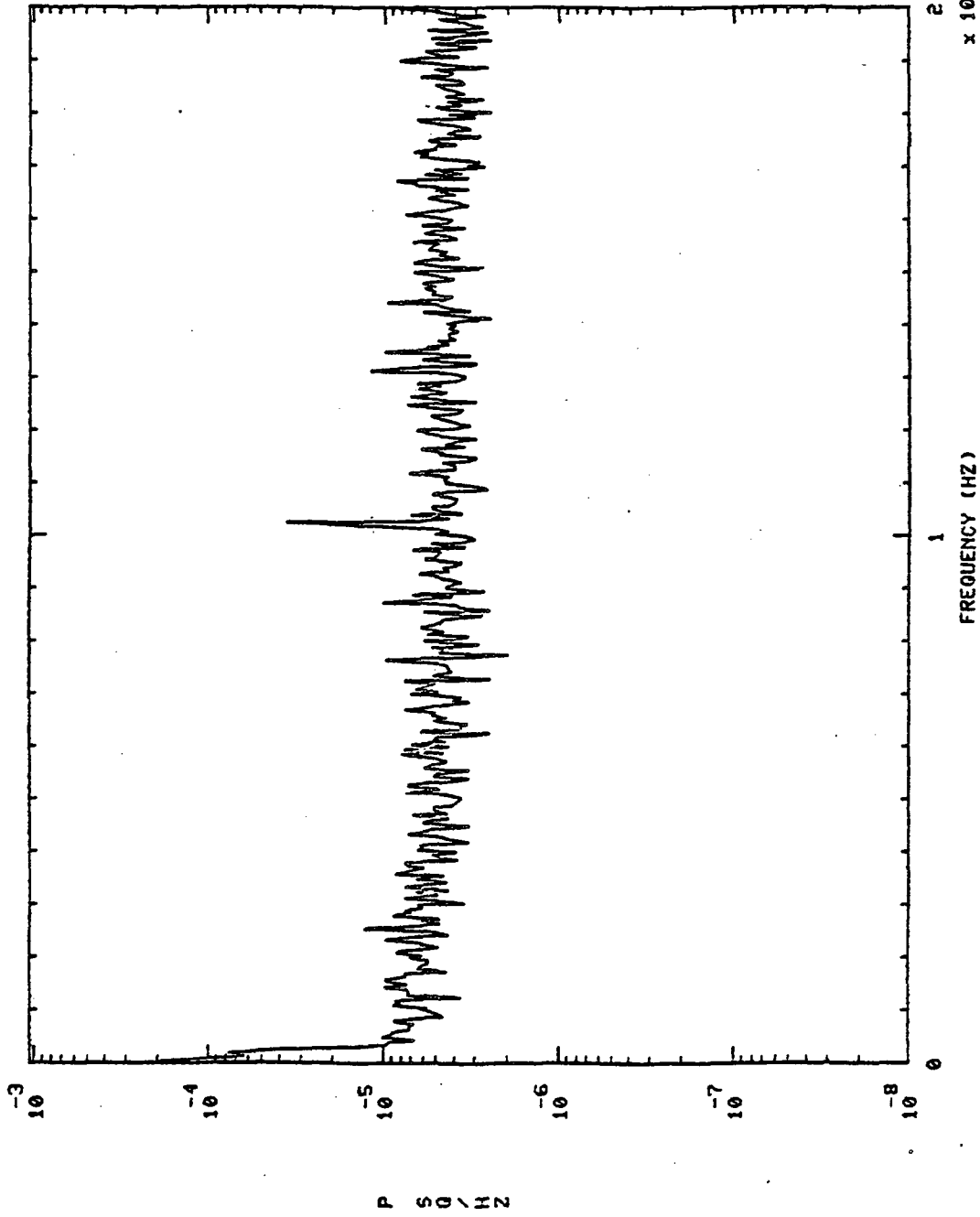
P SQ \ HZ

S+ 725.0

901409 HPFP BAL CAU PR

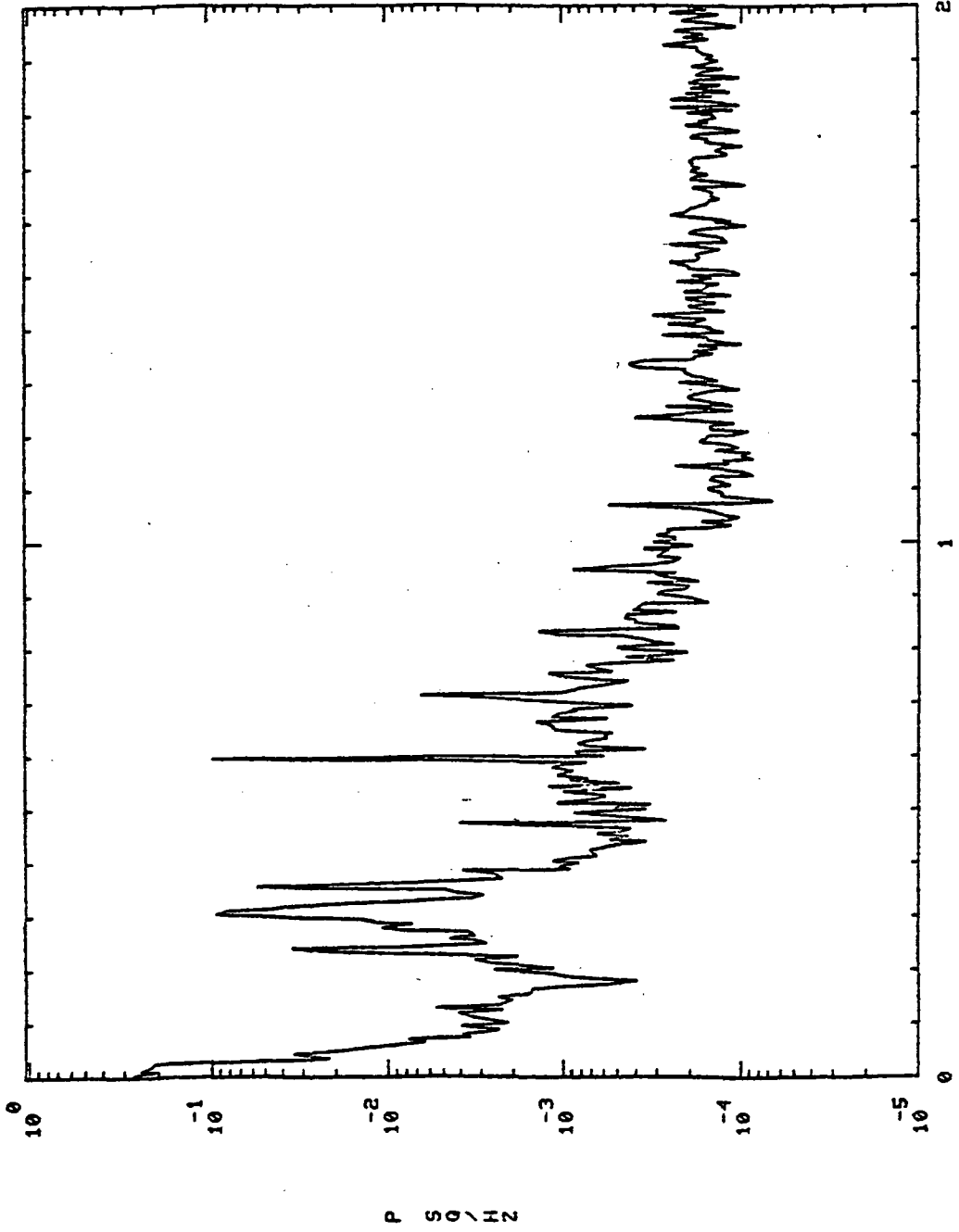


901409 FFB PC S+ 7.0



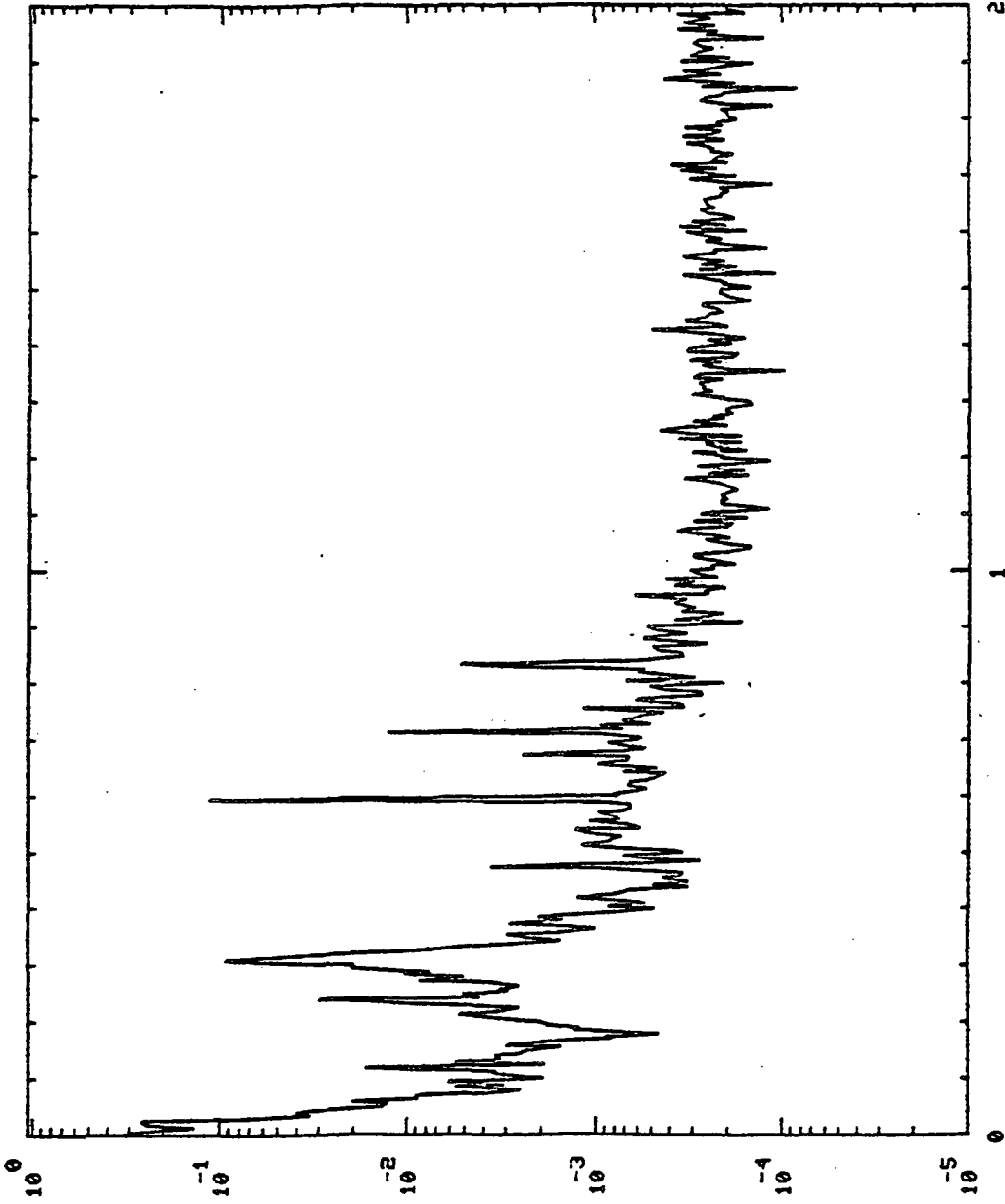
S+ 240.0

901409 FPB PC



S+ 500.0

901409 FPB PC



P S G \ H Z

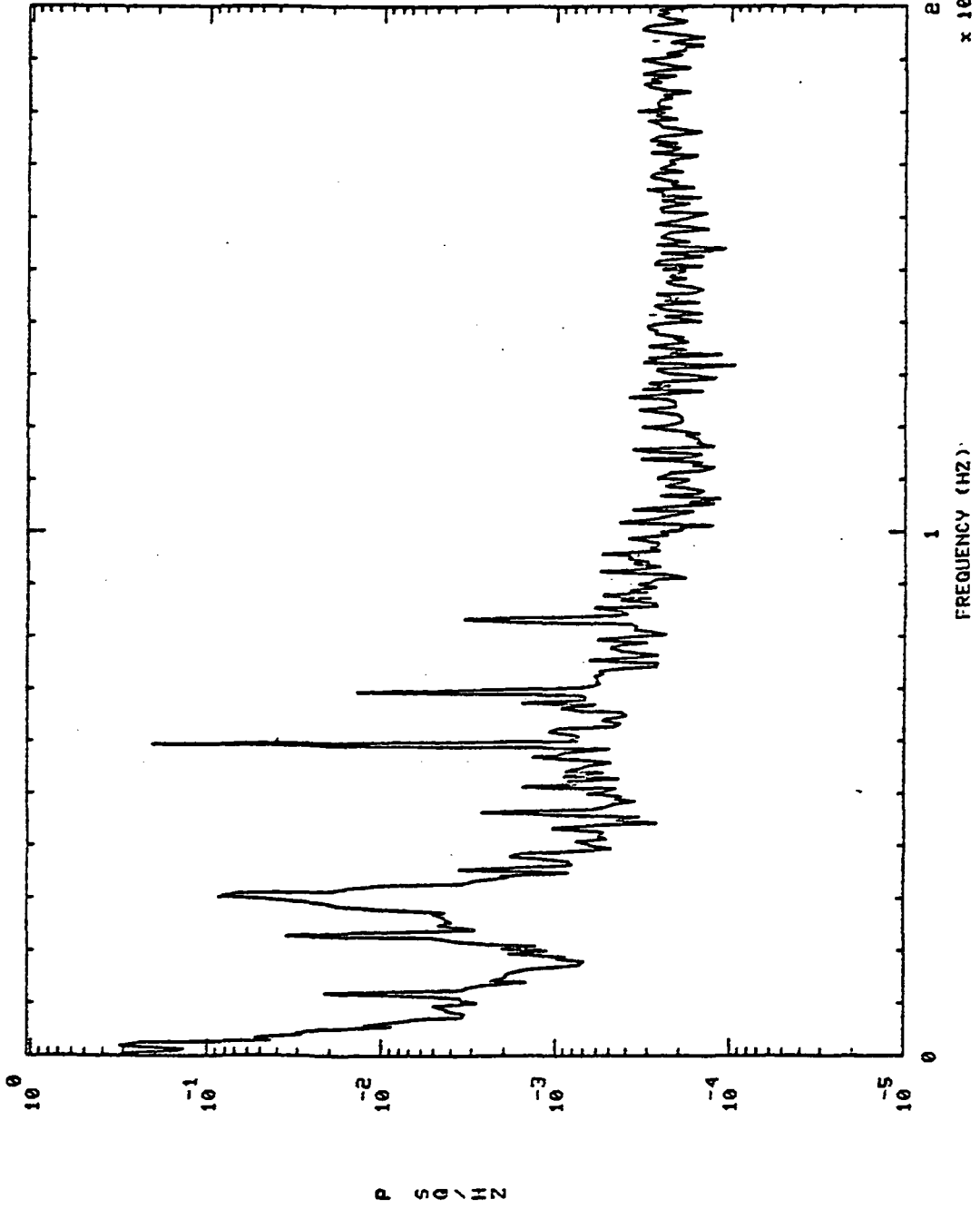
FREQUENCY (HZ)

$2.4 \times 10^4$



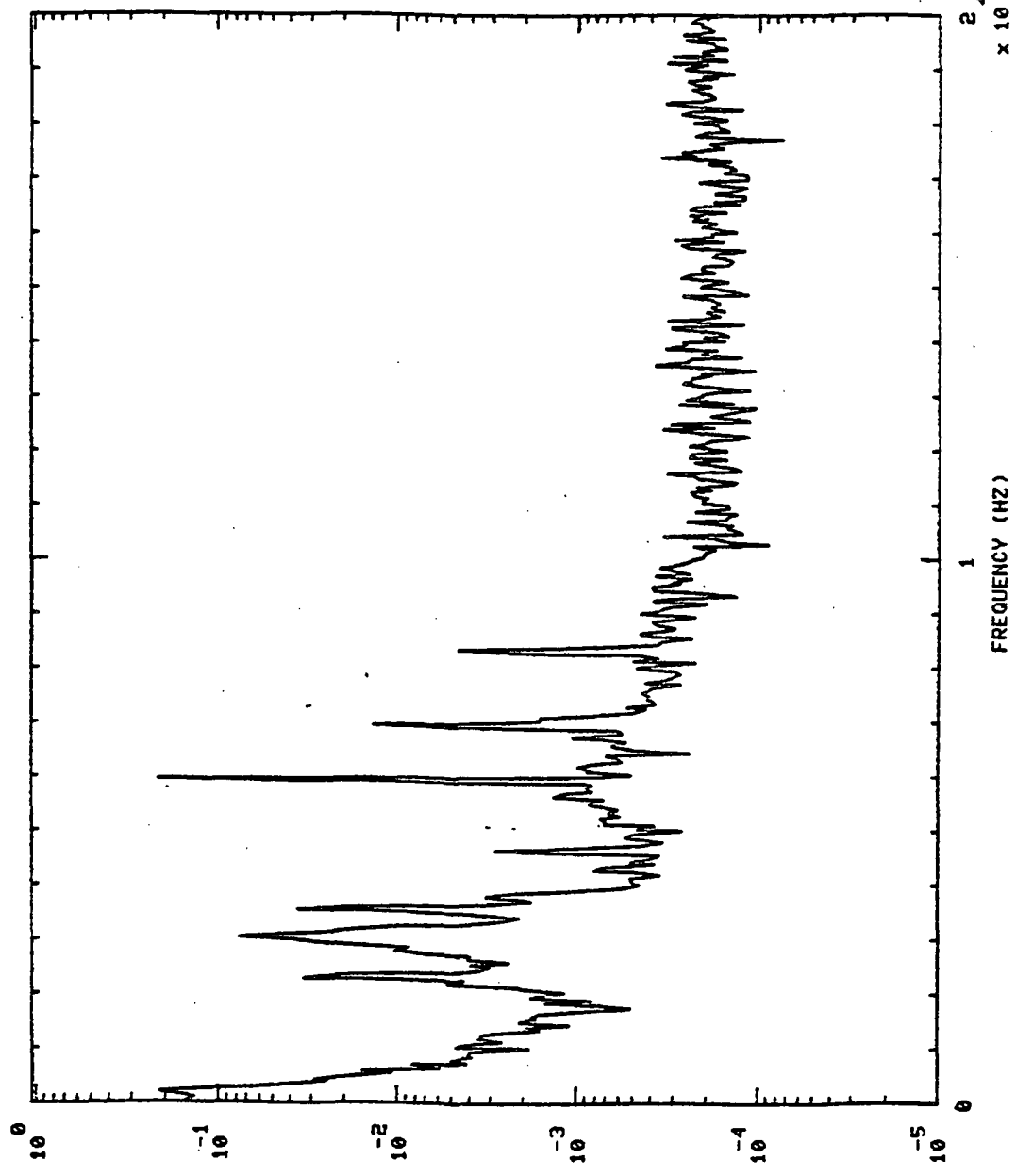
S+ 525.0

901409 FPB PC



S+ 705.0

901409 FPB PC



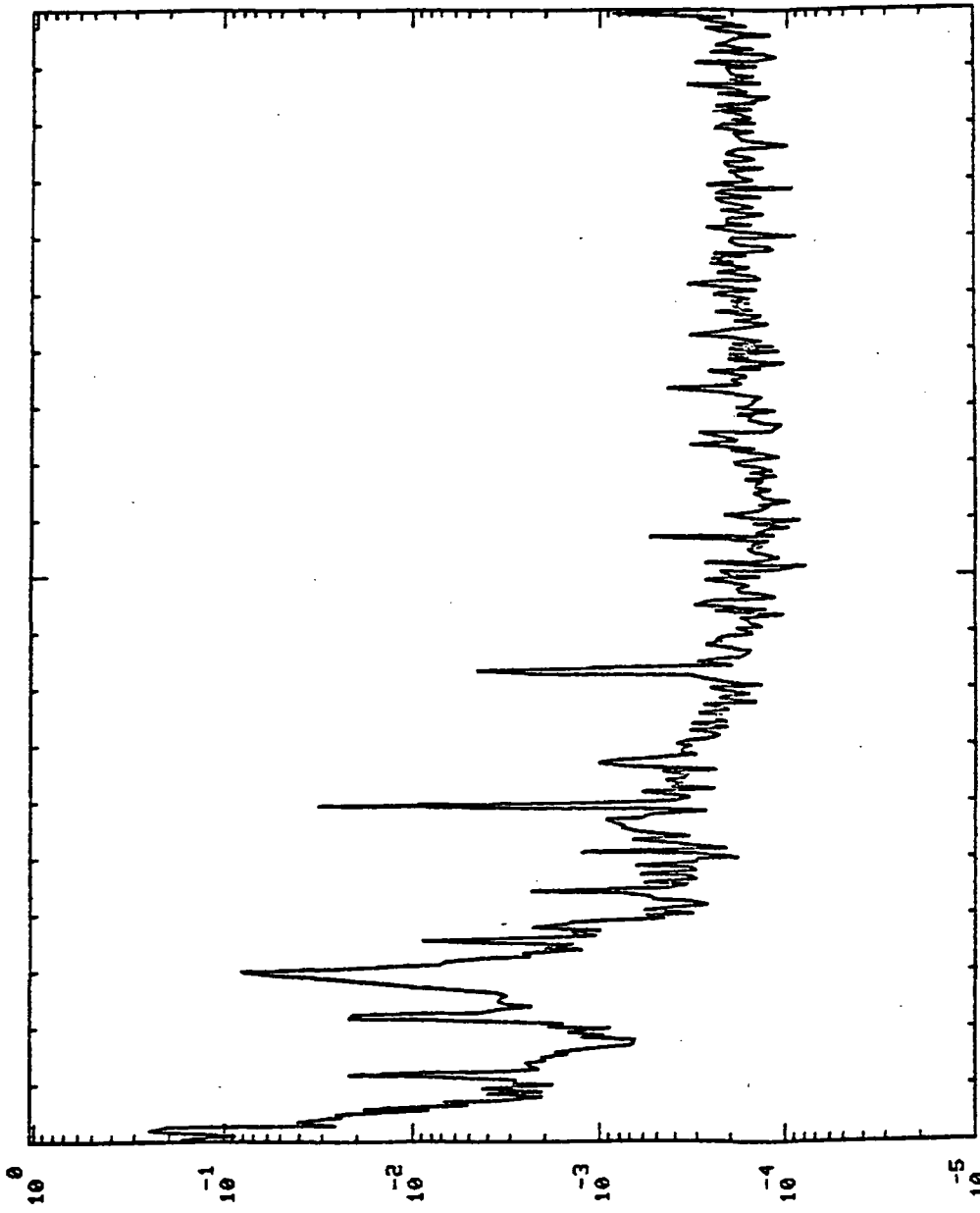
P S D \ I N

2 4  
x 10

1  
FREQUENCY (HZ)

St 725.0

901409 FPB PC

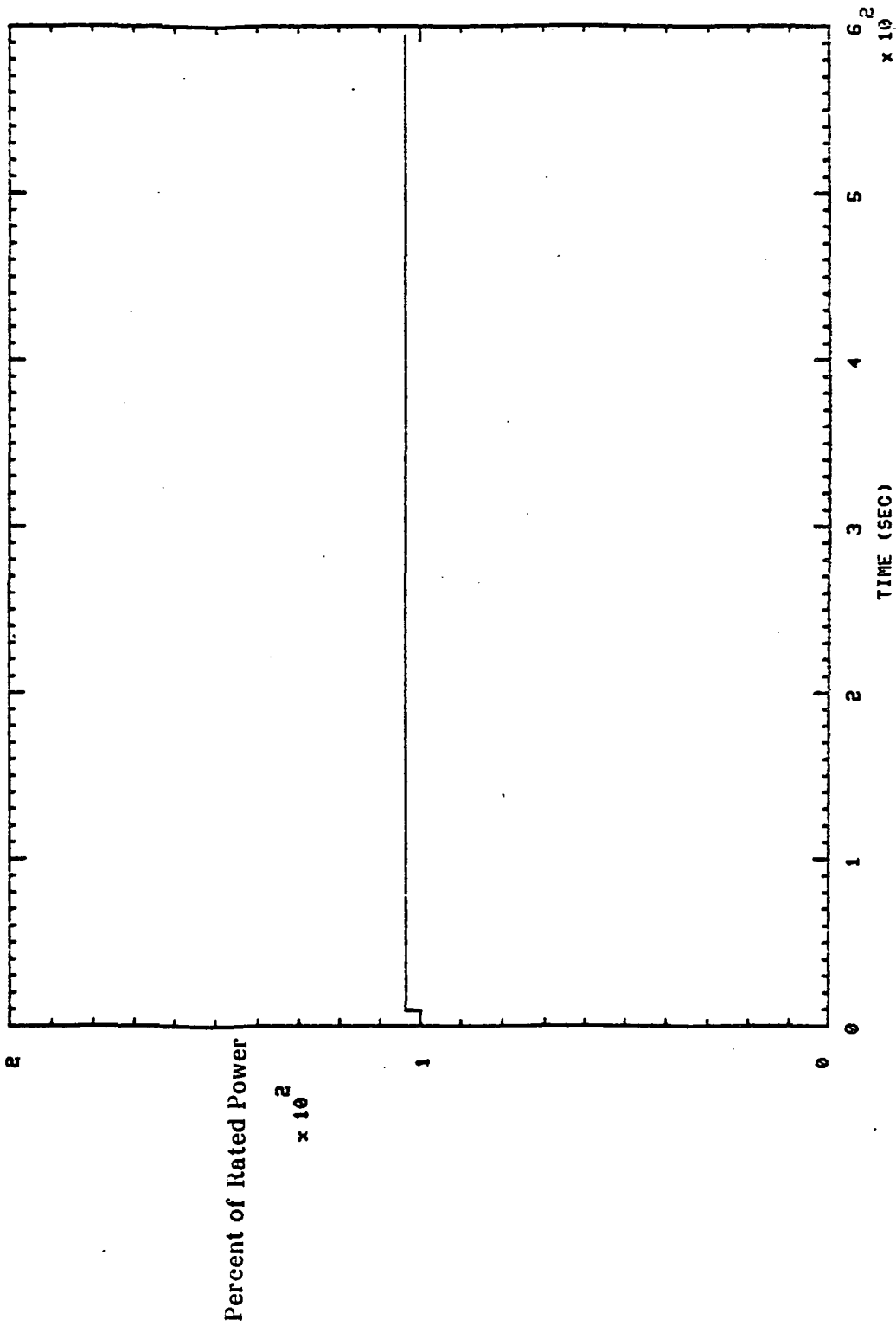


2.4  
x 10<sup>4</sup>

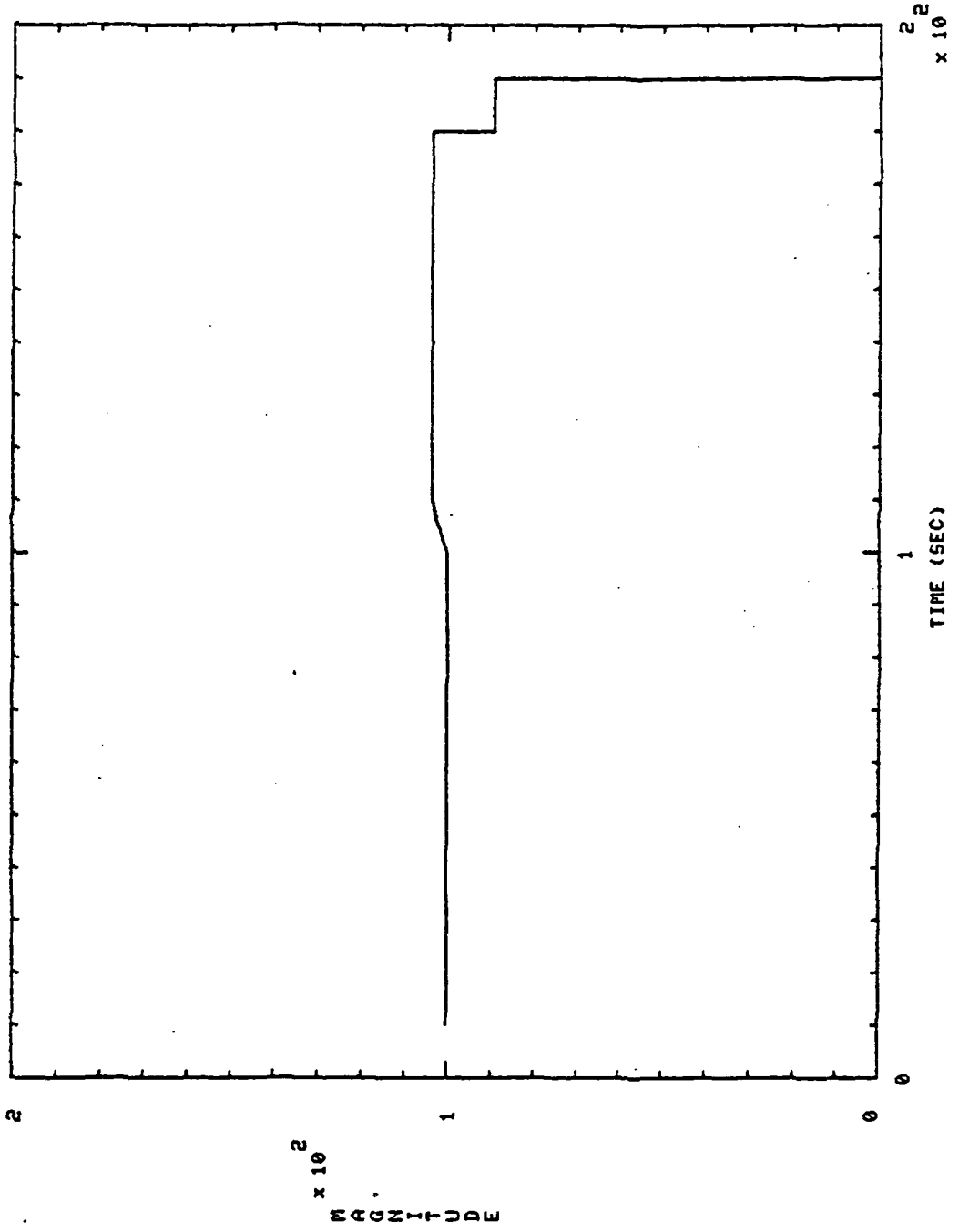
FREQUENCY (HZ)

P S D / H Z

901410 THRUST (UNFILTERED )



901413 THRUST (UNFILTERED)



901414 THRUST (UNFILTERED )

