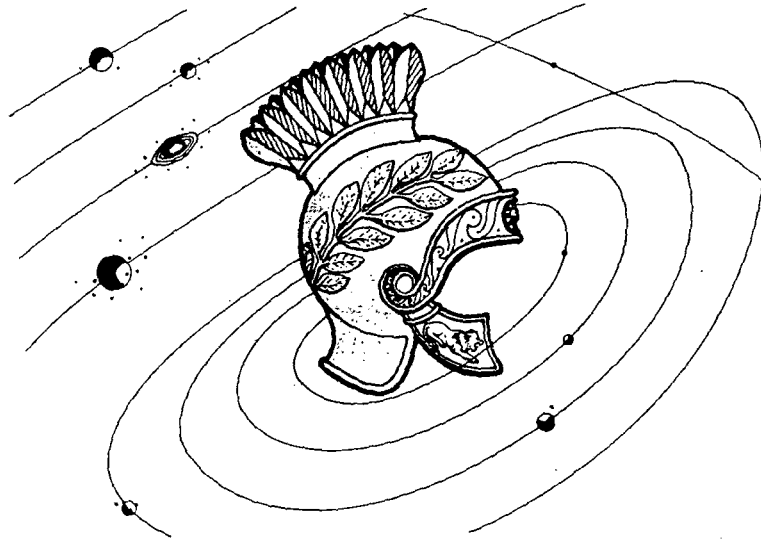


GLO2095



APPENDIX

SEISMIC GROUNDNOISE SURVEY IN THE SAN EMIDIO DESERT

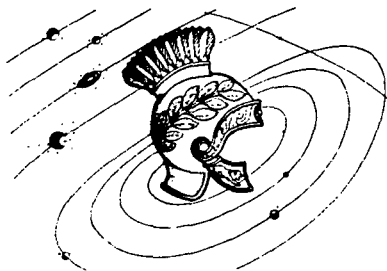
for:

STANDARD OIL COMPANY OF CALIFORNIA

2-9-NV9SE3

SENTURION SCIENCES, INC.

TULSA, U.S.A.



SENTURION SCIENCES, INC.

6945 EAST 11TH STREET, TULSA, OKLAHOMA
P.O. BOX 15447, TULSA, OKLAHOMA 74115
PHONE (918) 836-6746

IMAGINEERING for EXPLORATION, ENGINEERING and ENVIRONMENT

APPENDIX

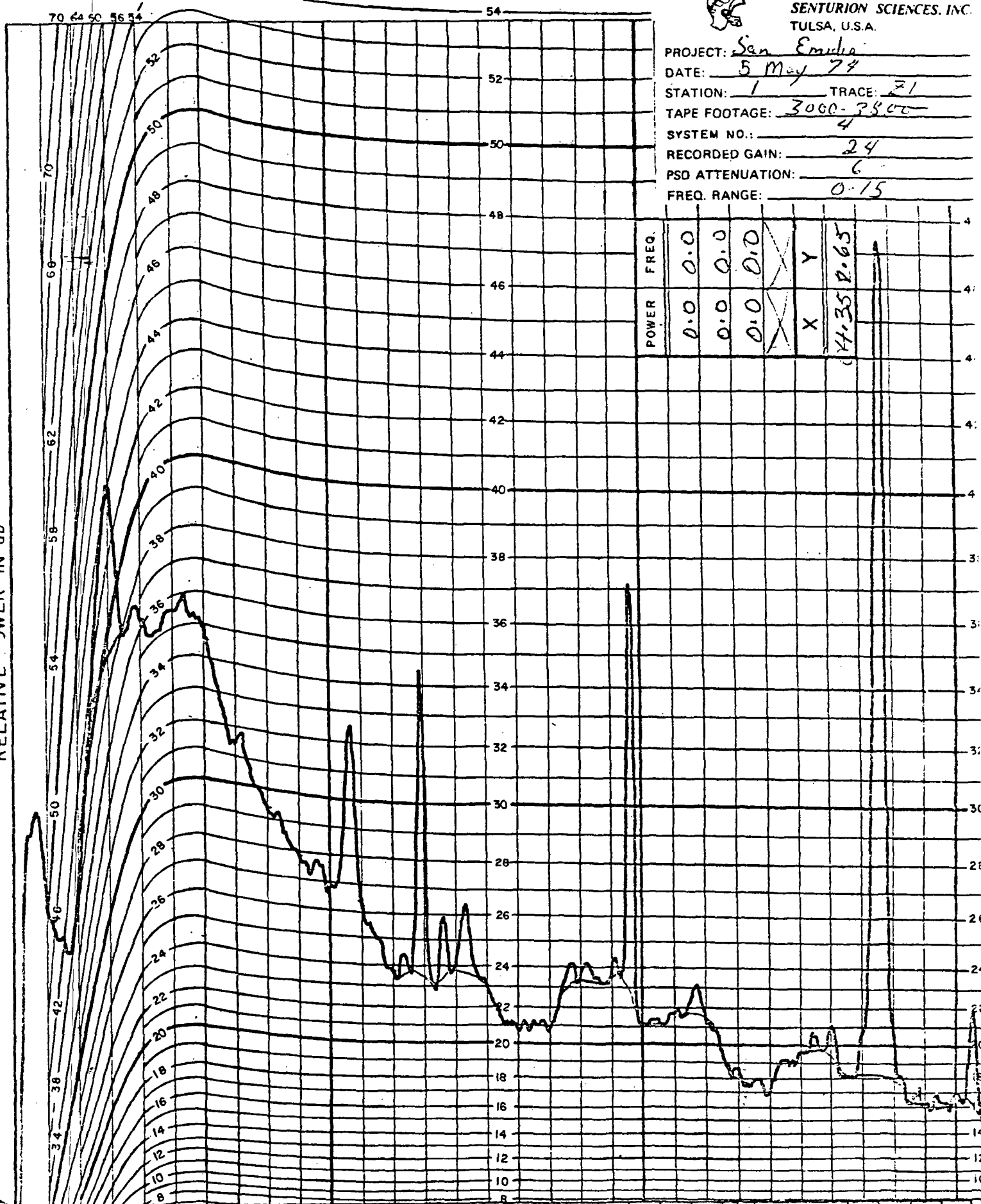
SAN EMIDIO DESERT GROUNDNOISE



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emilio
 DATE: 5 May 77
 STATION: 1 TRACE: 21
 TAPE FOOTAGE: 3000-2800
 SYSTEM NO.: 4
 RECORDED GAIN: 24
 PSD ATTENUATION: 6
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



18.9	50.0	38.0	30.0	36.0	35.6	35.0	31.5	29.3	27.9	26.9	26.4	23.8	23.4	23.8	23.0	21.0	21.0	23.2	21.3	21.1	21.8	21.5	18.5	17.2	19.6	19.4	18.0	18.0	16.0	16.3	
0	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15															

HS-10 2000 Ω Absolute

FREQUENCY

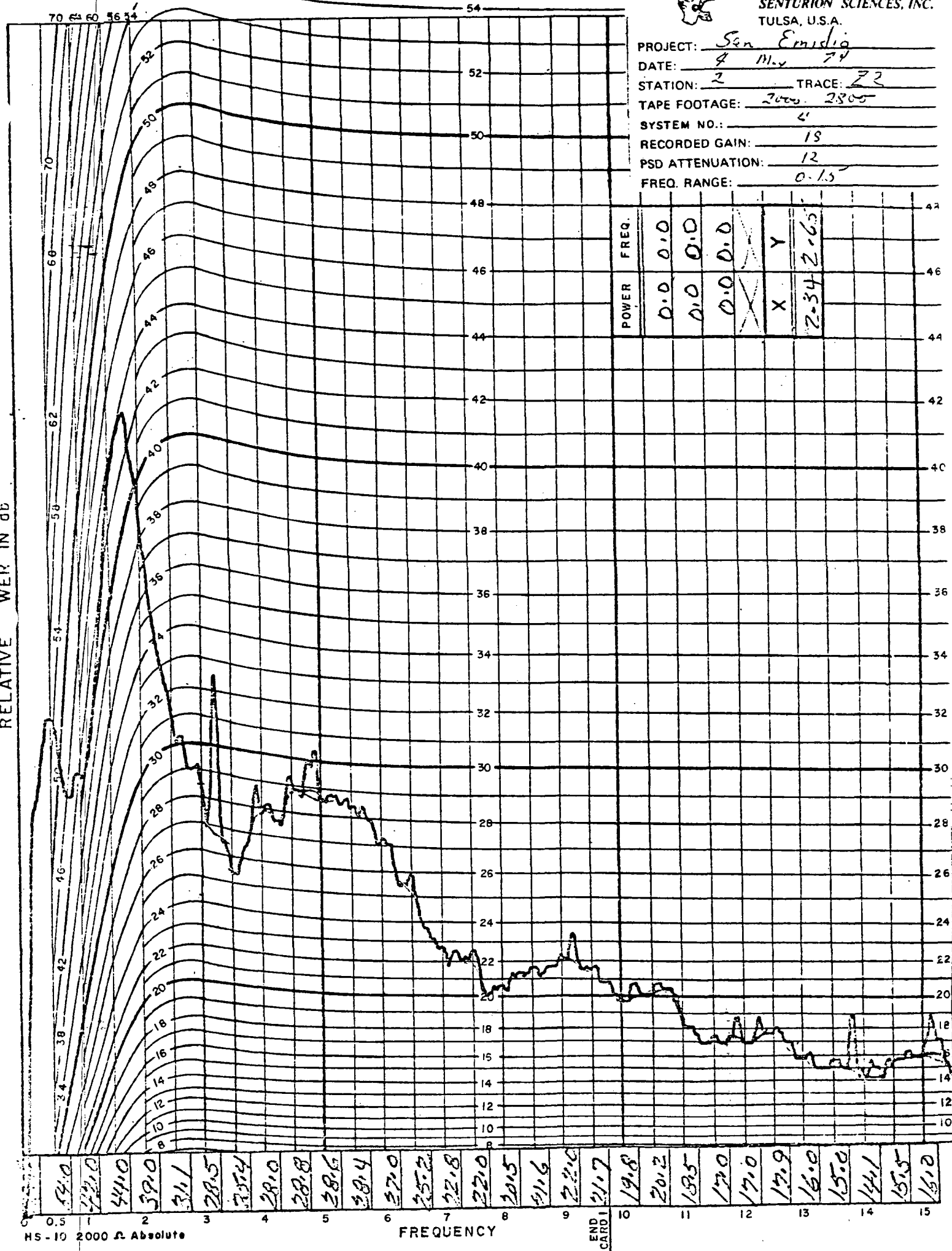
END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
DATE: 4 May 74
STATION: 2 TRACE: 22
TAPE FOOTAGE: 2000 2800
SYSTEM NO.: 4
RECORDED GAIN: 18
PSD ATTENUATION: 12
FREQ. RANGE: 0-15

RELATIVE WER IN db



HS-10 2000 Ω Absolute

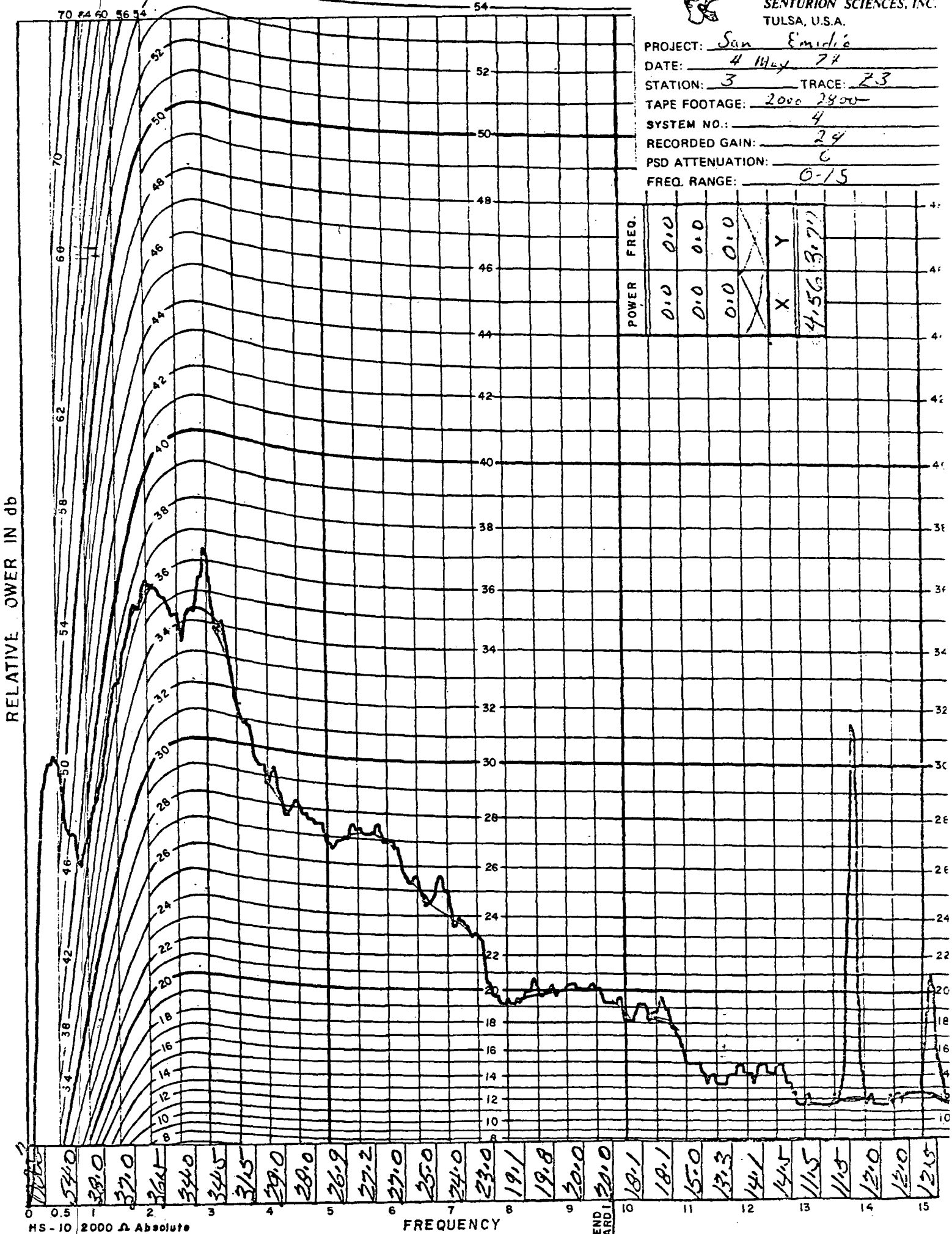
FREQUENCY

END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 4 May 77
 STATION: 3 TRACE: 23
 TAPE FOOTAGE: 2000 2400
 SYSTEM NO.: 4
 RECORDED GAIN: 24
 PSD ATTENUATION: 6
 FREQ. RANGE: 0-15



POWER	FREQ.
0.0	0.0
0.0	0.0
0.0	0.0
X	Y
	4.56 3.77

HS-10 2000 Ω Absolute

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

54.0
52.0
50.0
48.0
46.0
44.0
42.0
40.0
38.0
36.0
34.0
32.0
30.0
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0

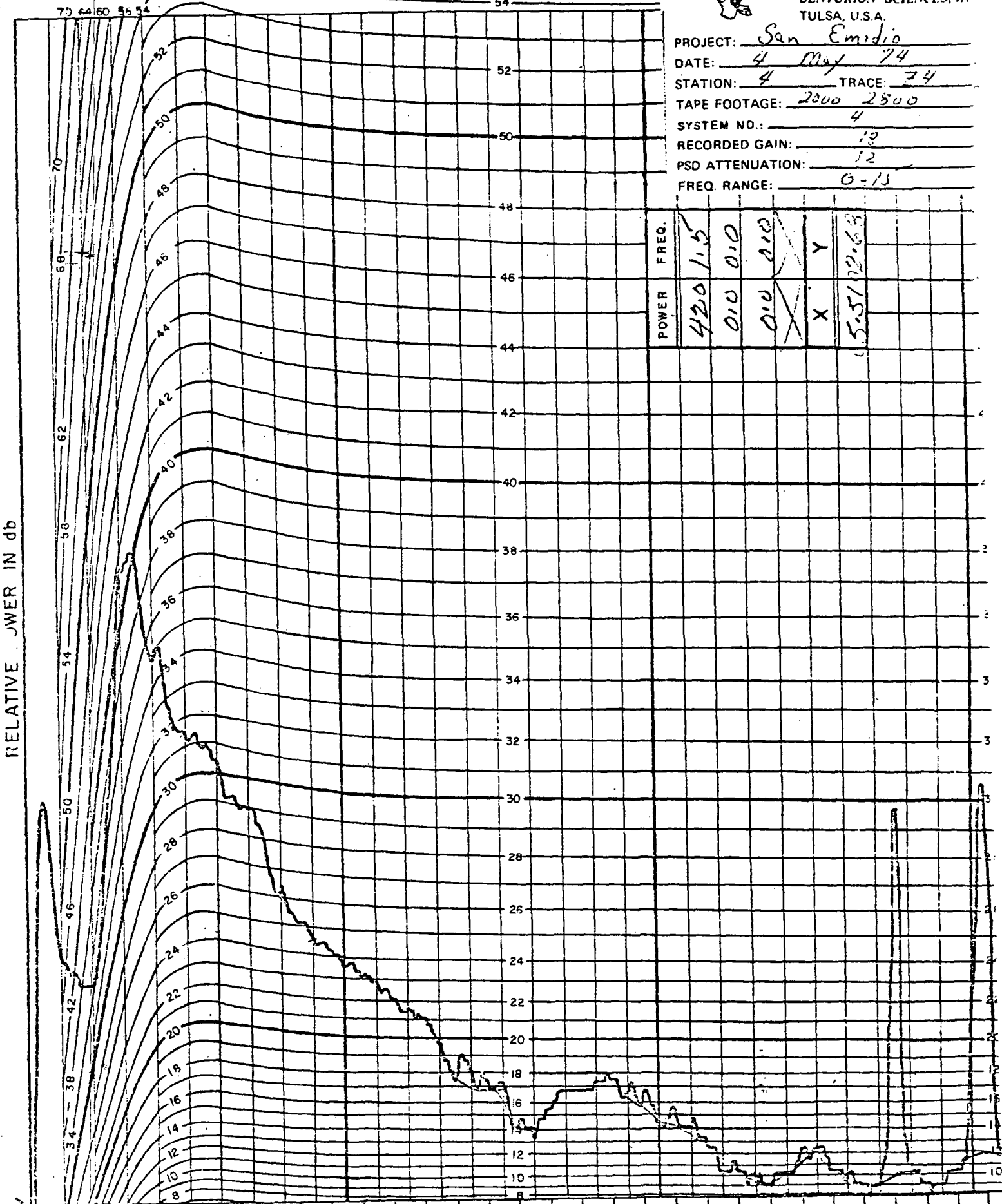
19.1
19.8
20.0
20.0
18.1
18.1
15.0
13.3
14.1
14.5
11.5
11.5
12.0
12.0
12.5

END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 4 May 74
 STATION: 4 TRACE: 74
 TAPE FOOTAGE: 2000 2500
 SYSTEM NO.: 4
 RECORDED GAIN: 18
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-13



POWER	FREQ.
420	1.5
0.0	0.0
0.0	0.0
X	Y
	5.5 / 12.68

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

HS-10 2000 Ω Absolute

FREQUENCY

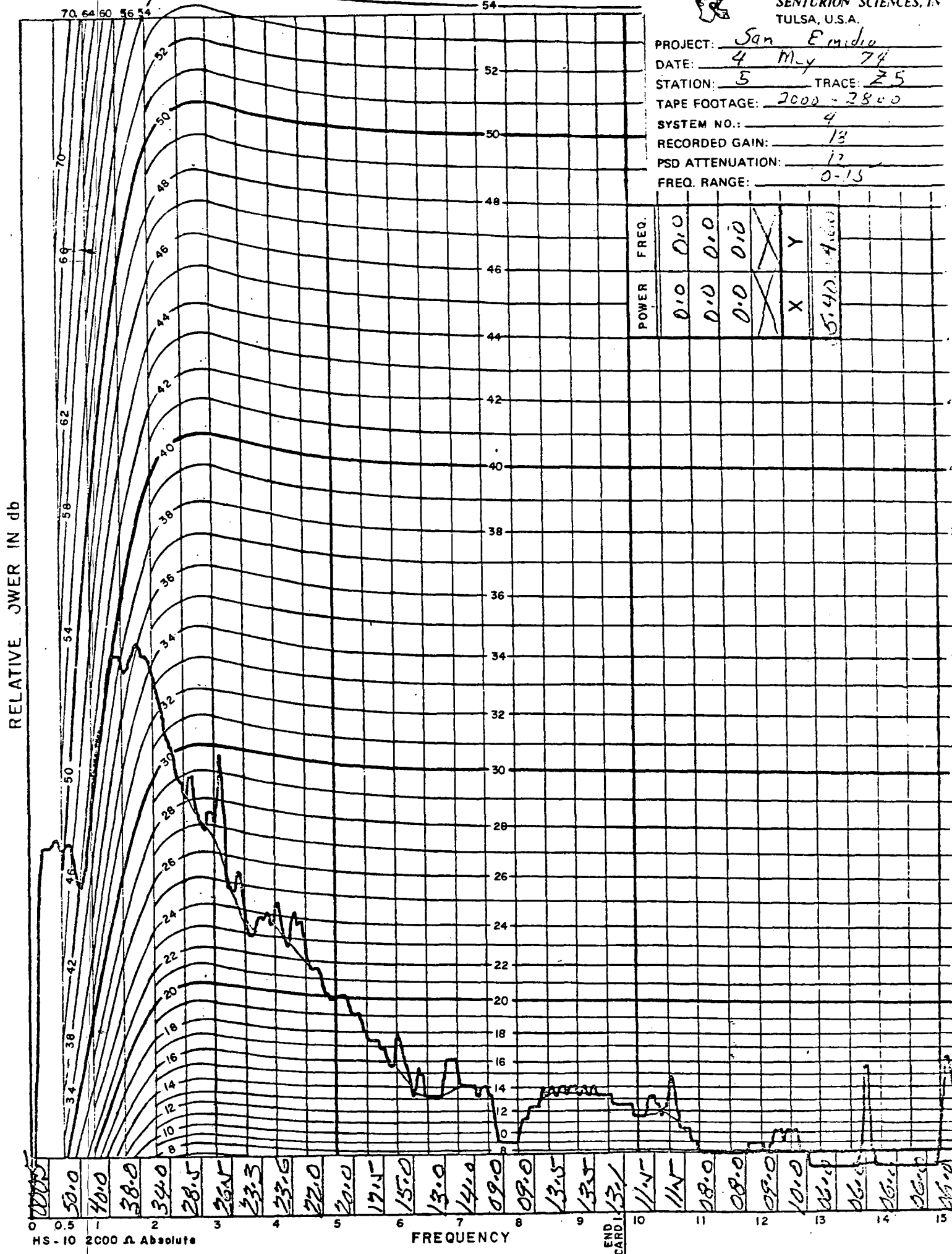
END CARD 1

0.000
 50.0
 34.0
 42.0
 35.0
 31.4
 30.5
 27.0
 25.0
 24.5
 23.7
 22.8
 21.4
 19.8
 17.0
 16.0
 14.0
 16.8
 17.1
 16.2
 14.1
 13.4
 10.1
 09.0
 10.1
 12.3
 10.0
 09.0
 10.0
 09.0
 11.9



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 4 May 74
 STATION: 5 TRACE: 25
 TAPE FOOTAGE: 2000 - 2800
 SYSTEM NO.: 4
 RECORDED GAIN: 13
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15



POWER	FREQ.
0.0	0.0
0.0	0.0
0.0	0.0
X	X
X	Y
5.40	14.00

HS - 10 2000 Ω Absolute

50.0
 40.0
 38.0
 34.0
 28.5
 26.5
 23.3
 23.6
 22.0
 20.0
 17.5
 15.0
 13.0
 14.0
 09.0
 09.0
 13.5
 13.5
 13.1
 11.5
 11.5
 08.0
 08.0
 09.0
 10.0
 06.0
 06.0
 06.0
 06.0
 06.0

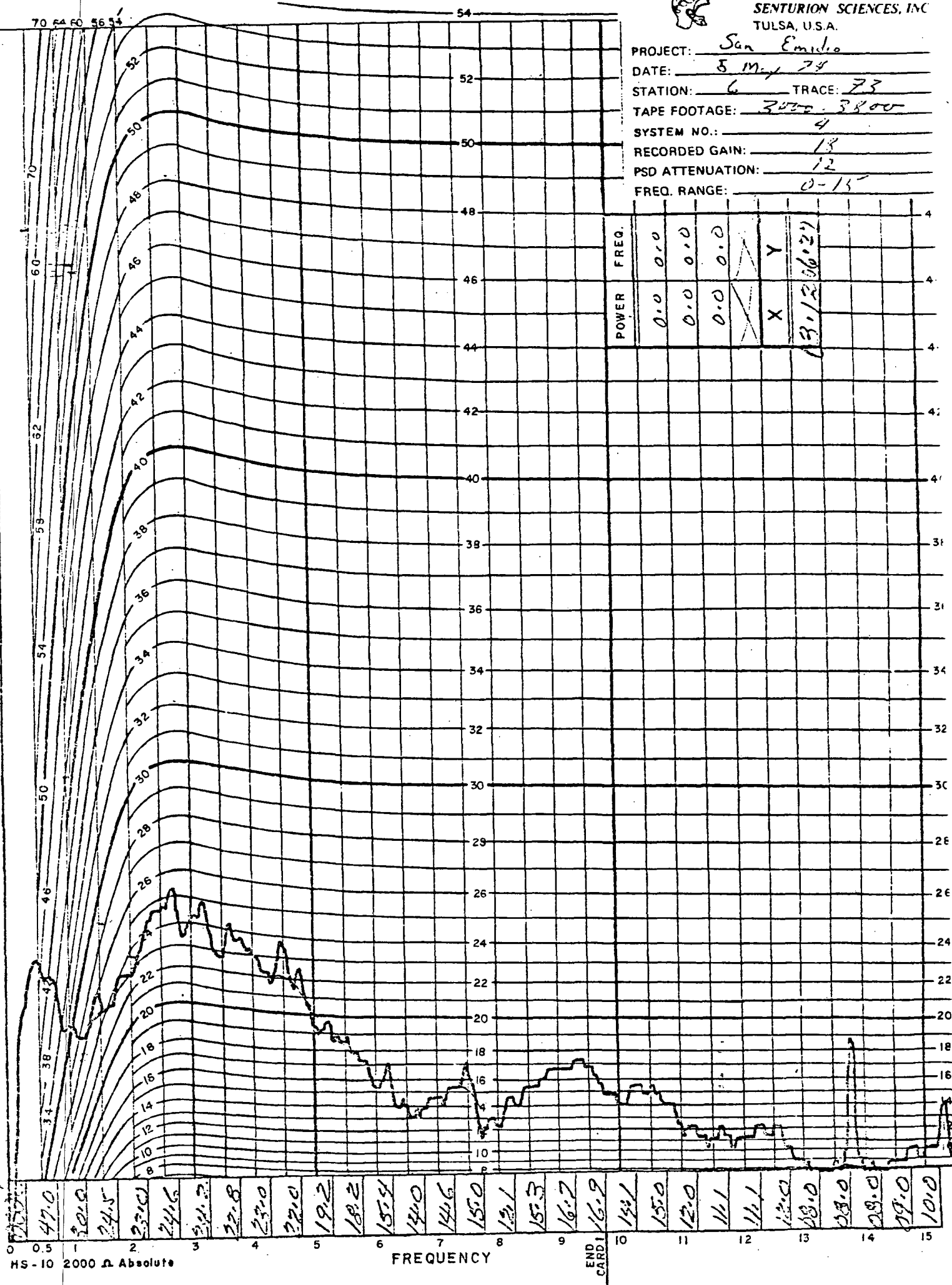
END CARD 1321



SENTURION SCIENCES, INC
TULSA, U.S.A.

PROJECT: San Emilio
 DATE: 5 May 78
 STATION: 6 TRACE: 73
 TAPE FOOTAGE: 3000-3800
 SYSTEM NO.: 4
 RECORDED GAIN: 13
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



47.0
30.0
24.5
23.0
24.6
24.7
27.8
25.0
22.0
19.2
18.2
15.4
14.0
14.6
15.0
13.1
15.3
16.7
16.9
14.1
15.0
12.0
11.1
11.1
13.0
18.0
18.0
19.0
10.0

HS-10 2000 Ω Absolute

FREQUENCY

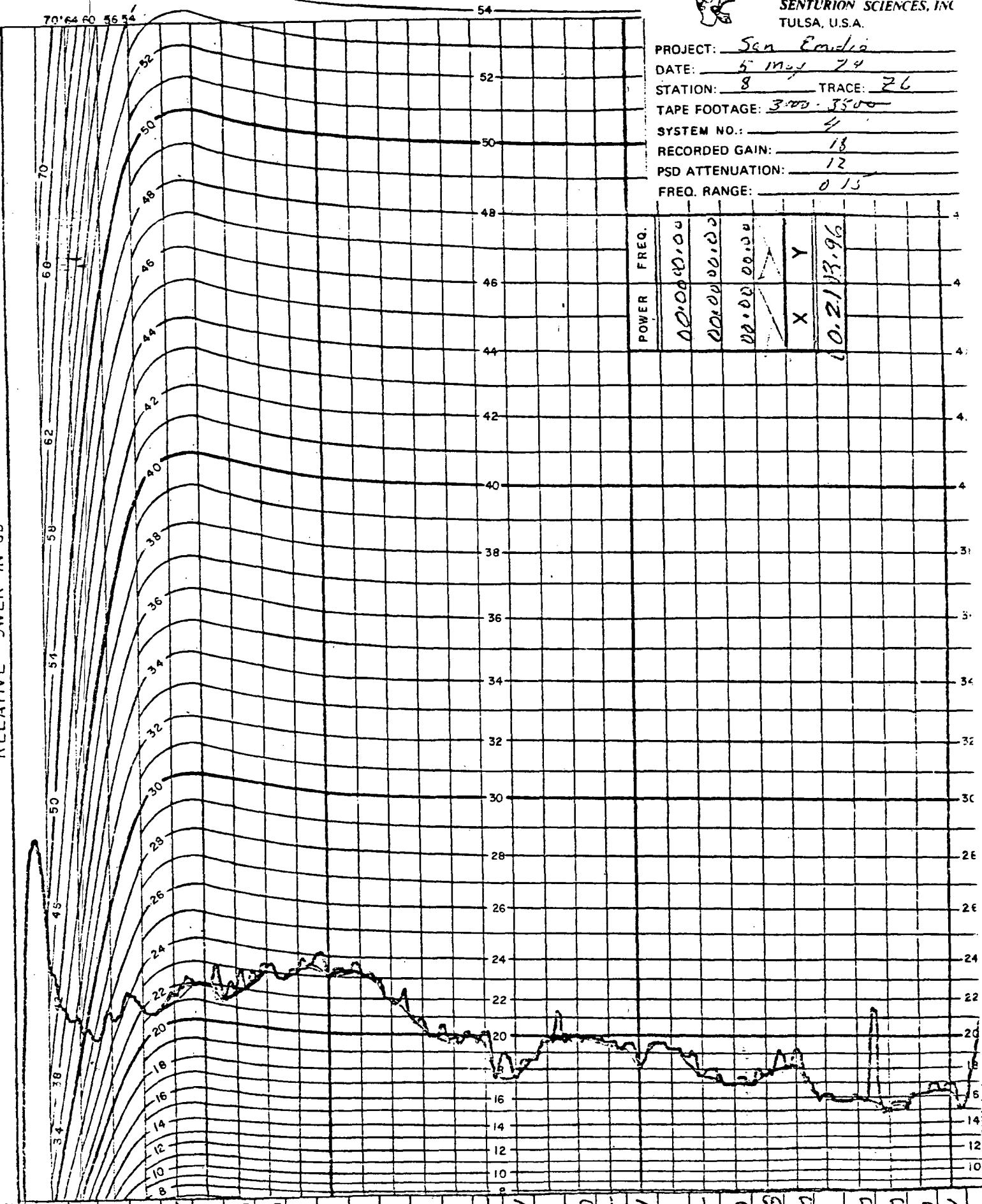
END CARD 1



SENTURION SCIENCES, INC
TULSA, U.S.A.

PROJECT: San Eudio
 DATE: 5 May 74
 STATION: 8 TRACE: 26
 TAPE FOOTAGE: 3:00 - 3:50
 SYSTEM NO.: 4
 RECORDED GAIN: 18
 PSD ATTENUATION: 12
 FREQ. RANGE: 0.15

RELATIVE JWVER IN db



168.0
 47.0
 32.0
 25.0
 20.0
 21.5
 22.0
 22.0
 23.0
 23.0
 23.0
 23.0
 23.0
 20.3
 20.0
 19.5
 17.4
 19.9
 20.0
 19.5
 18.1
 19.1
 17.5
 17.0
 17.8
 16.0
 16.0
 15.0
 16.0
 16.1

HS-10 2000 Ω Absolute

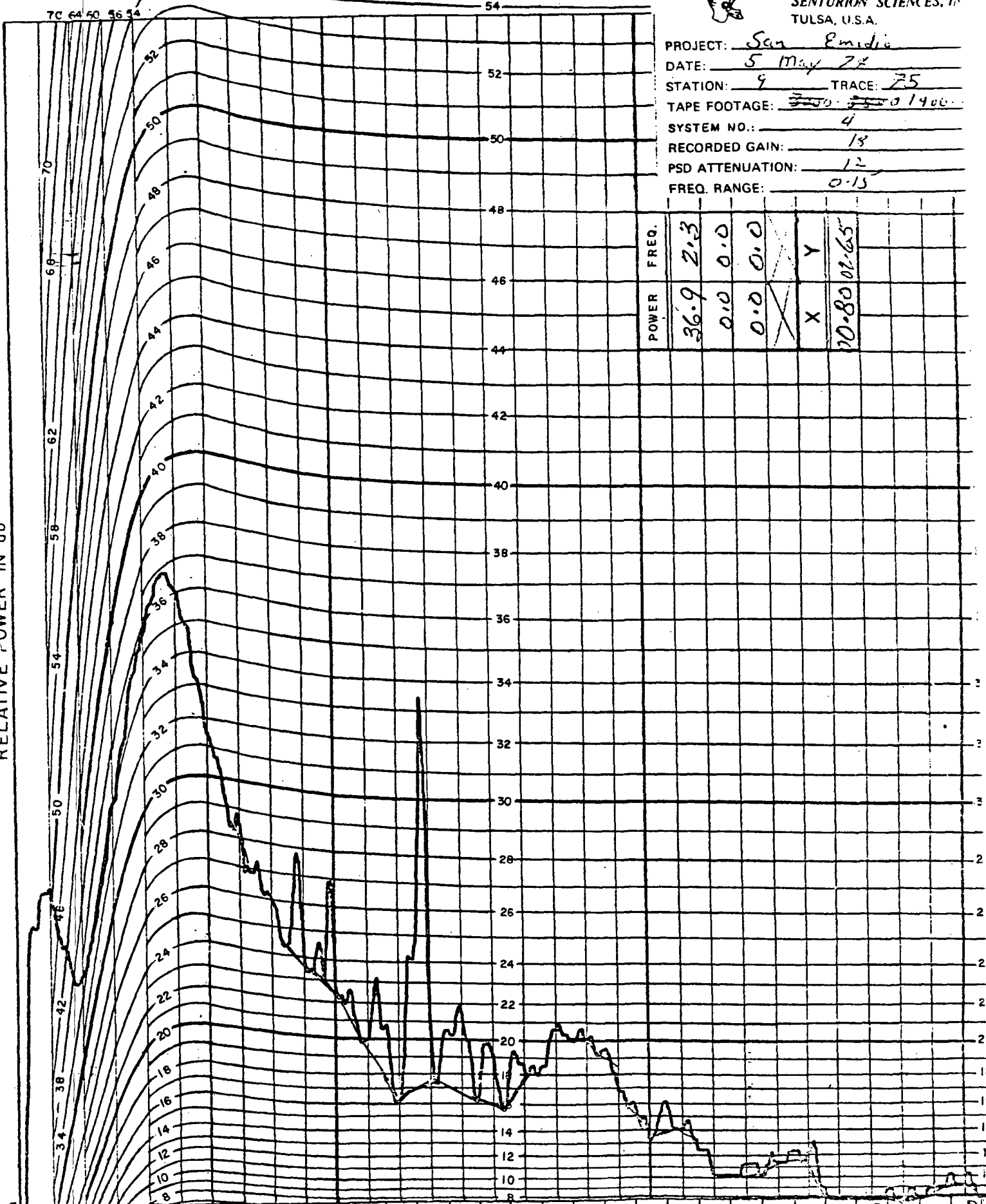
FREQUENCY

END CARD 1



PROJECT: Sea Emission
 DATE: 5 May 72
 STATION: 9 TRACE: 25
 TAPE FOOTAGE: ~~350~~ 01400
 SYSTEM NO.: 4
 RECORDED GAIN: 18
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-13

RELATIVE POWER IN db



POWER	FREQ.
36.9	2.3
0.0	0.0
0.0	0.0
X	Y
70.80 01.65	

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

HS-10 2000 Ω Absolute

FREQUENCY

END CARD 1

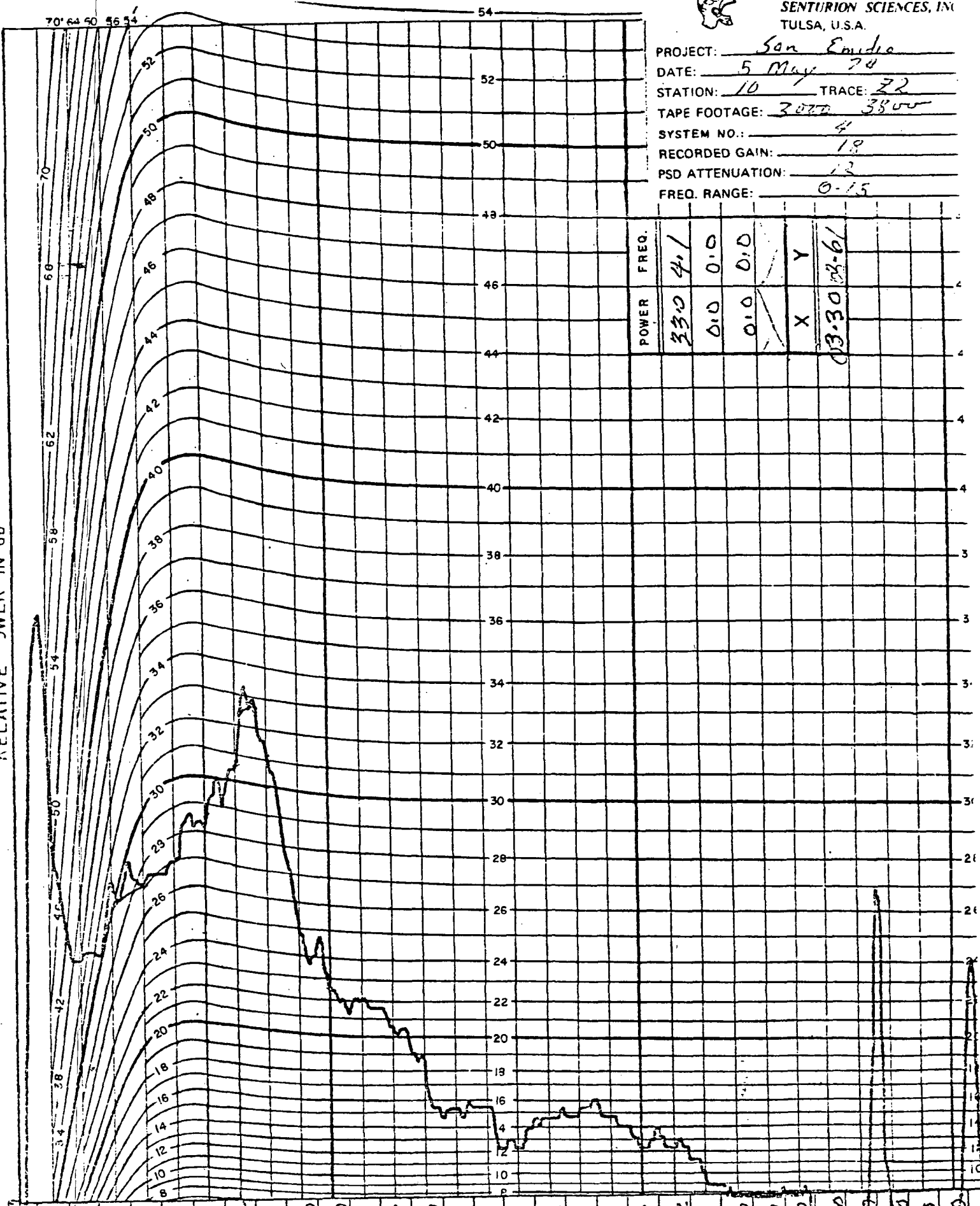
50.0
34.0
34.0
36.0
36.0
31.5
28.0
26.0
23.7
22.3
19.4
18.1
19.2
18.8
16.0
17.5
20.6
20.0
17.0
13.2
14.0
10.1
11.1
11.2
11.0
08.0
08.0
09.0
09.0



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 5 May 70
 STATION: 10 TRACE: 22
 TAPE FOOTAGE: 3000 3800
 SYSTEM NO.: 4
 RECORDED GAIN: 1.8
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15

RELATIVE JWVER IN db



POWER	FREQ.	Y
33.0	4.1	
0.0	0.0	
0.0	0.0	
X		
03-30-61		

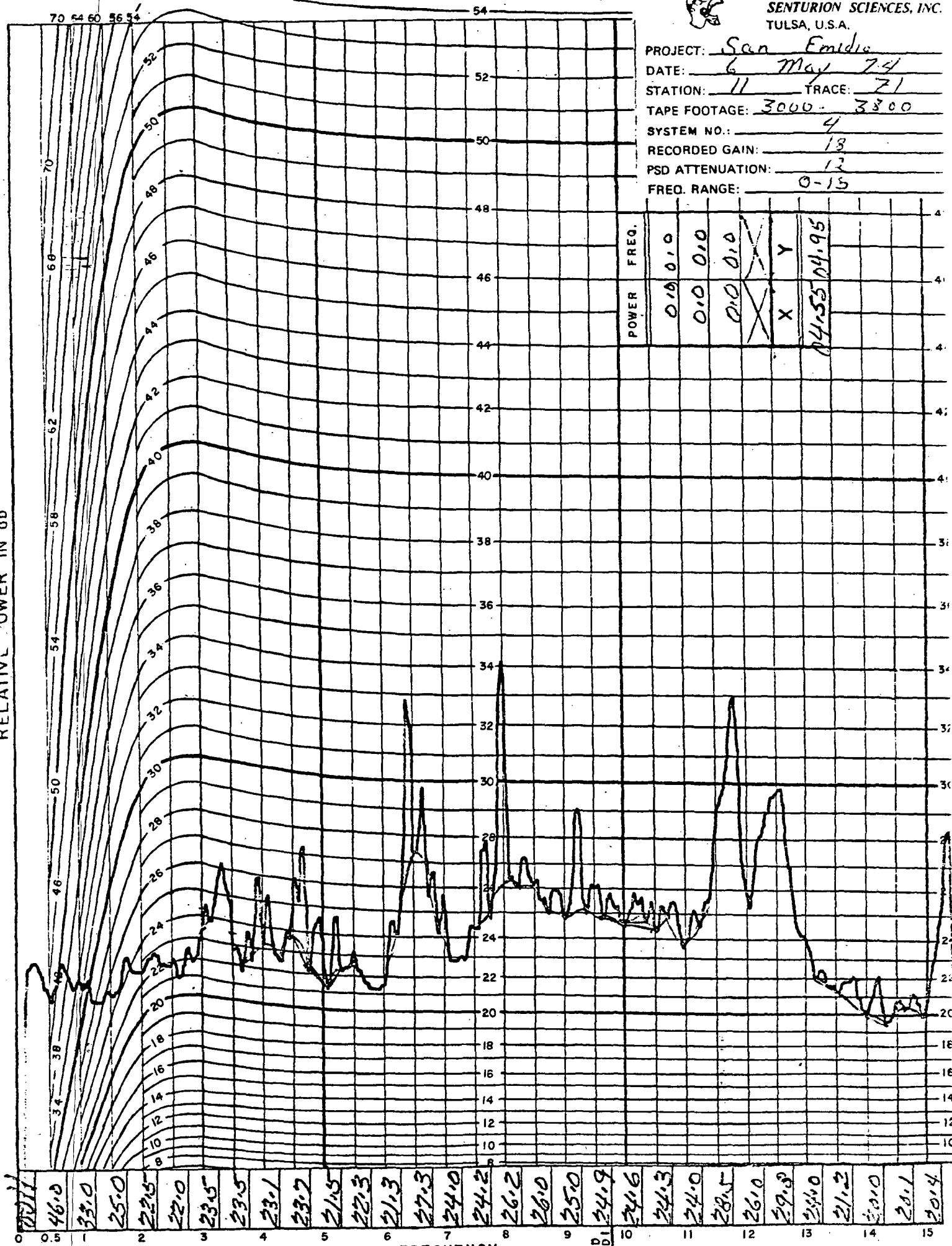
0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 HS-10 2000 Ω Absolute
 FREQUENCY
 END CARD 1

52.0
 56.0
 30.0
 27.0
 28.3
 30.5
 31.1
 35.0
 42.0
 22.0
 20.3
 18.0
 15.1
 15.4
 12.1
 14.6
 15.0
 14.8
 12.1
 12.2
 10.0
 08.0
 08.0
 08.0
 04.0
 01.0
 01.0
 05.0
 04.0



PROJECT: San Emidio
 DATE: 6 May 74
 STATION: 11 TRACE: 71
 TAPE FOOTAGE: 3000 - 3300
 SYSTEM NO.: 4
 RECORDED GAIN: 13
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

NS-10 2000 Δ Absolute

FREQUENCY

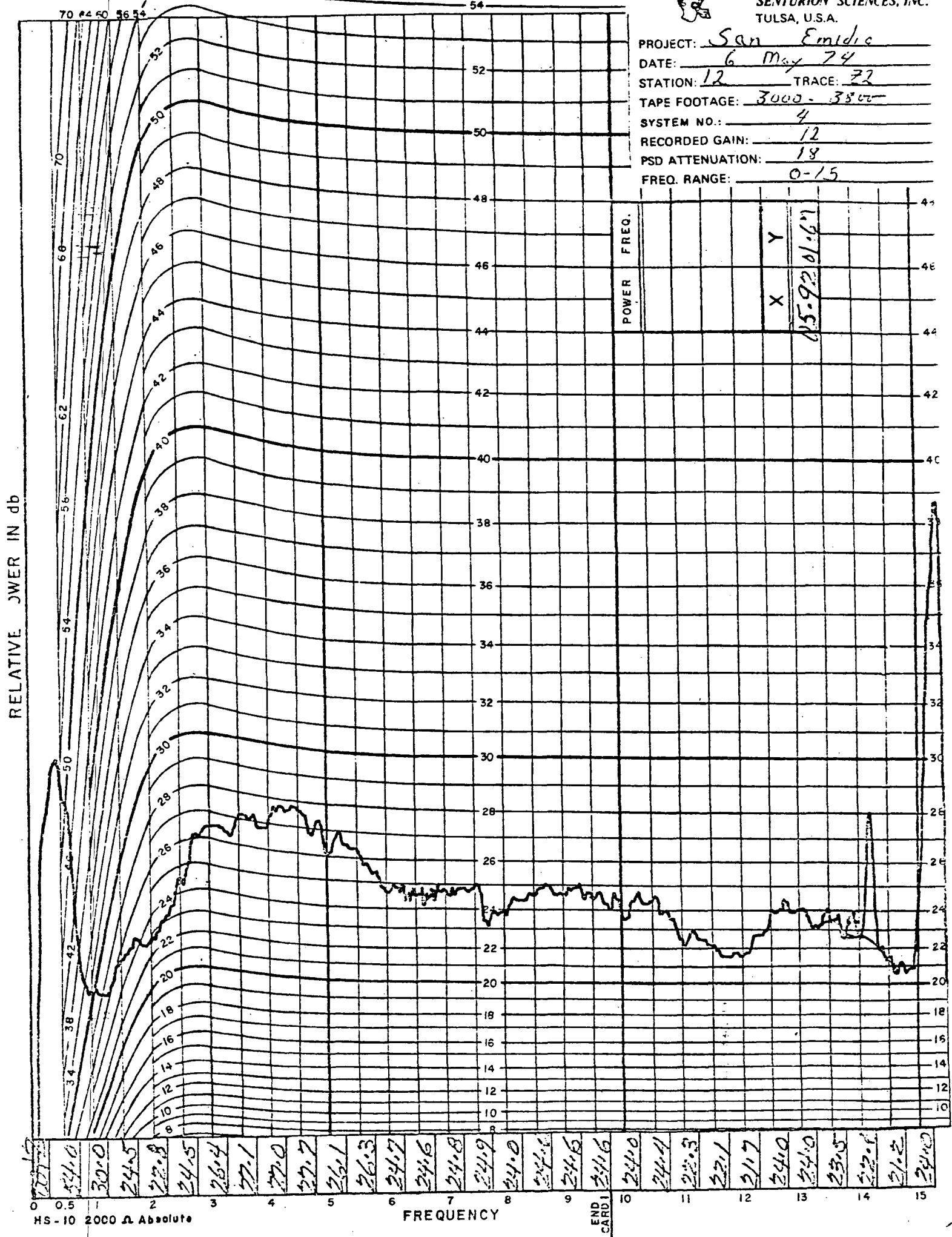
END CARD 1

46.0
45.0
25.0
22.5
22.0
23.5
23.5
23.1
23.7
21.5
22.3
21.3
27.3
24.0
24.2
26.2
26.0
25.0
24.9
24.6
24.3
24.0
28.5
26.0
29.8
24.0
21.2
20.0
20.1
20.4



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emdie
 DATE: 6 May 74
 STATION: 12 TRACE: 72
 TAPE FOOTAGE: 3000-3800
 SYSTEM NO.: 4
 RECORDED GAIN: 12
 PSD ATTENUATION: 18
 FREQ. RANGE: 0-15

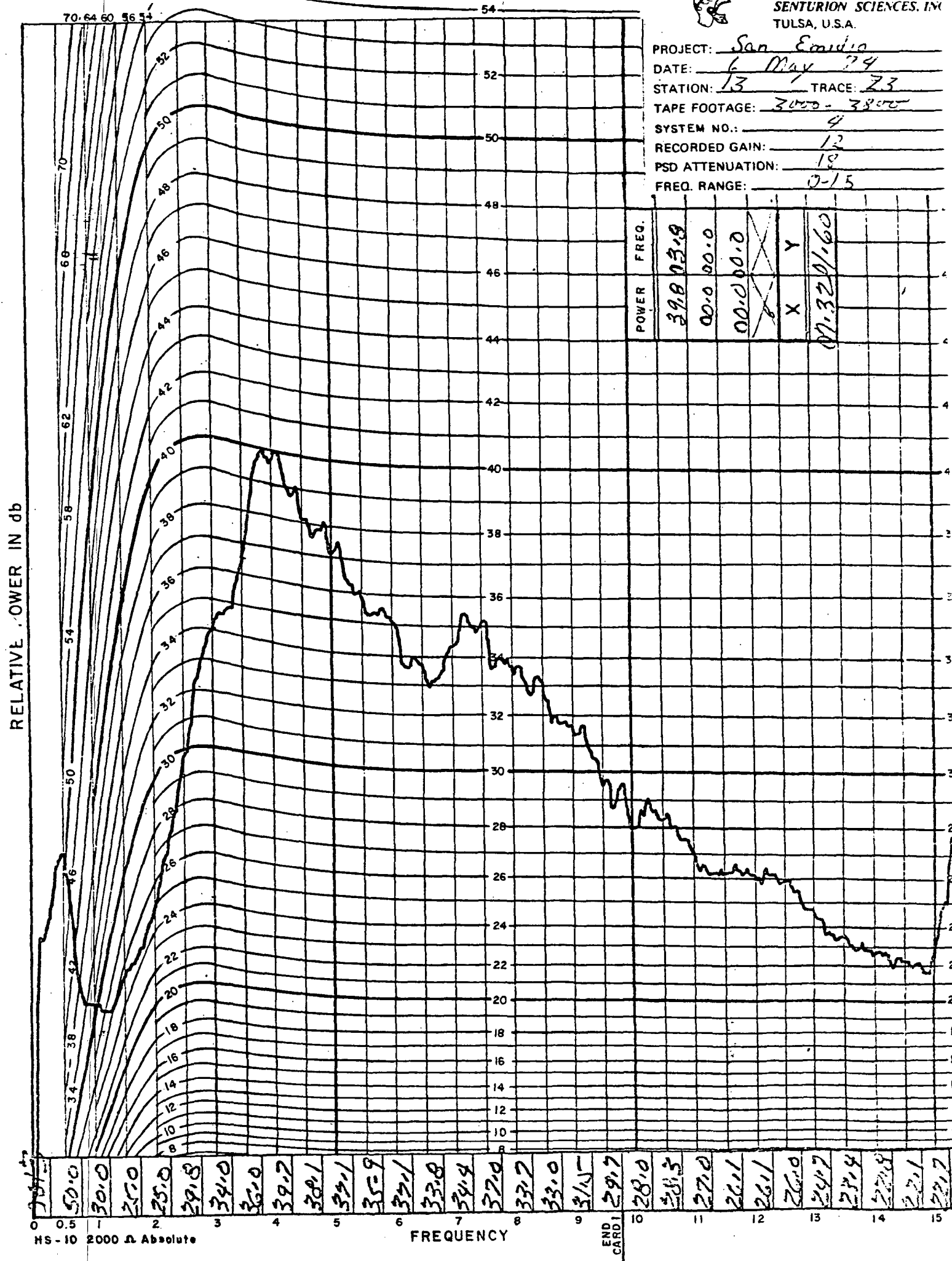


0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 6 May 74
 STATION: 13 TRACE: 23
 TAPE FOOTAGE: 3000 - 3800
 SYSTEM NO.: 4
 RECORDED GAIN: 12
 PSD ATTENUATION: 18
 FREQ. RANGE: 0-15



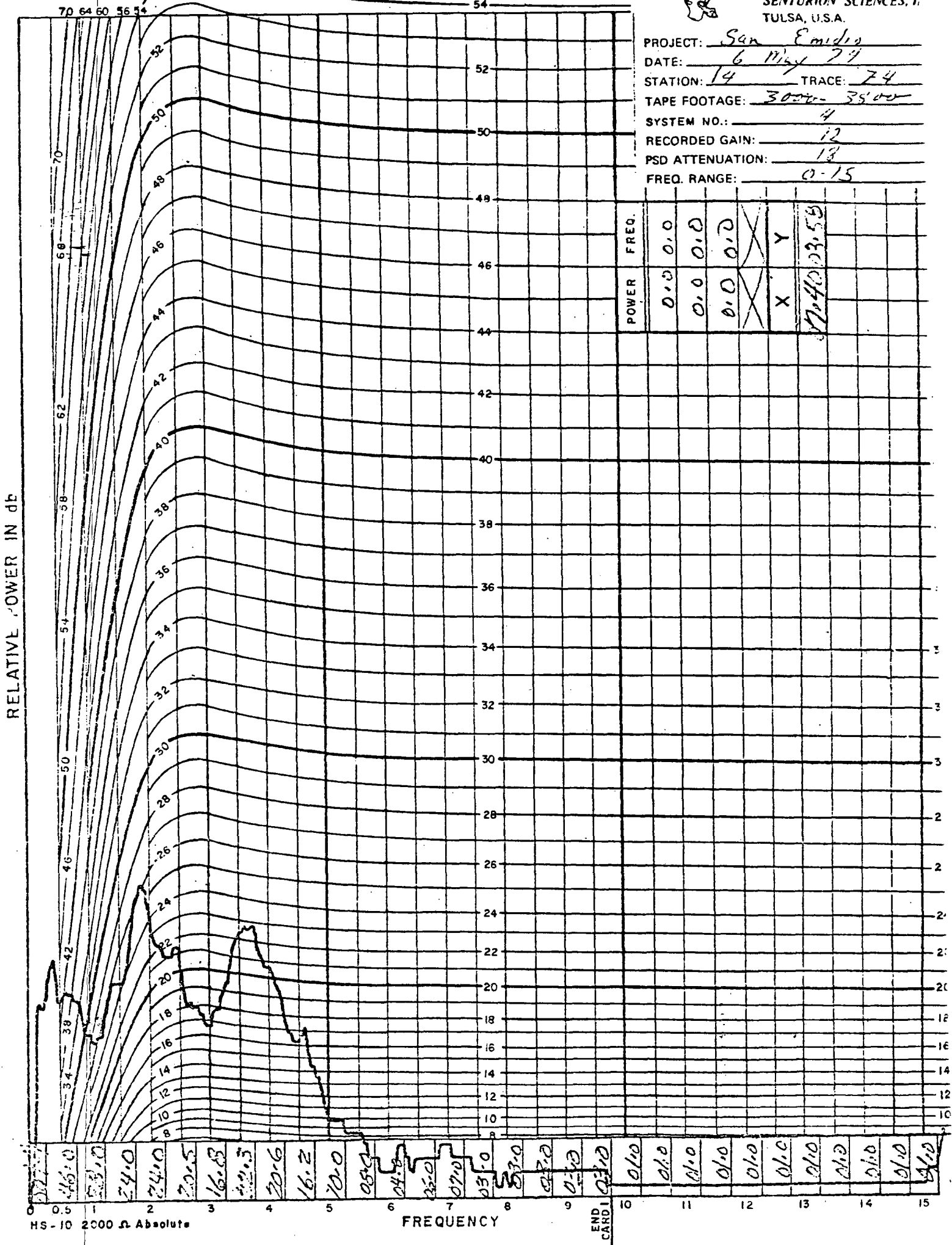
POWER	FREQ.
29.8	03.8
00.0	00.0
00.0	00.0
X	Y
07.320	0.60

END CARD 1



SENTURION SCIENCES, I.
TULSA, U.S.A.

PROJECT: San Emedin
 DATE: 6 May 74
 STATION: 14 TRACE: 74
 TAPE FOOTAGE: 3000-3500
 SYSTEM NO.: 4
 RECORDED GAIN: 12
 PSD ATTENUATION: 13
 FREQ. RANGE: 0-15



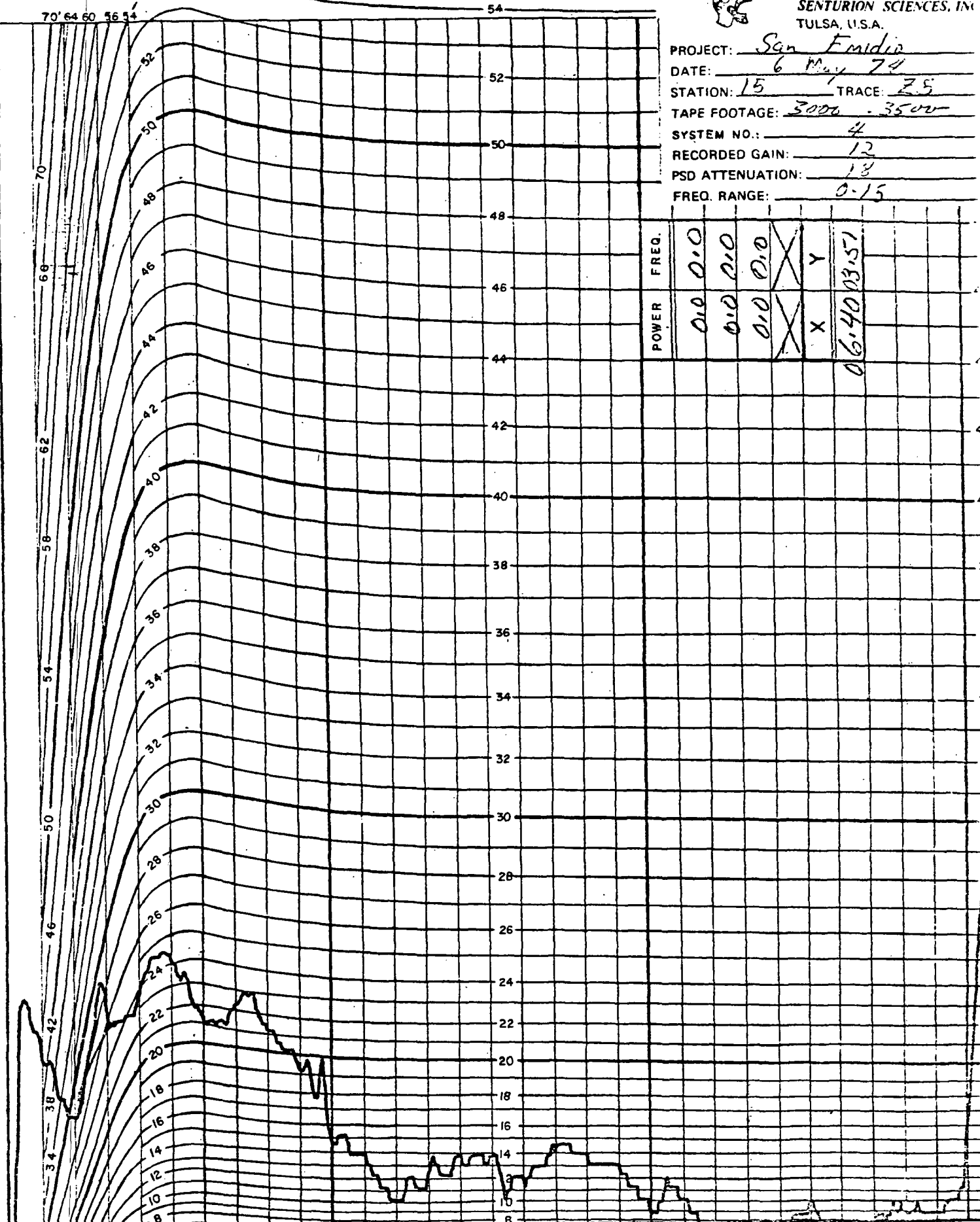
END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Fmidio
 DATE: 6 May 74
 STATION: 15 TRACE: 25
 TAPE FOOTAGE: 3000 - 3500
 SYSTEM NO.: 4
 RECORDED GAIN: 12
 PSD ATTENUATION: 18
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



POWER	FREQ.
0.0	0.0
0.0	0.0
0.0	0.0
X	X
X	Y
06.40	03.51

0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0
46.0	43.0	40.0	37.0	34.1	31.2	28.1	25.2	19.1	15.0	14.0	10.0	12.5	13.5	13.7	12.0	14.5	14.0	13.0	09.0	10.0	06.0	07.0	09.0	06.0	08.0	09.0	09.0	15.0	

HS-10 2000 Ω Absolute

FREQUENCY

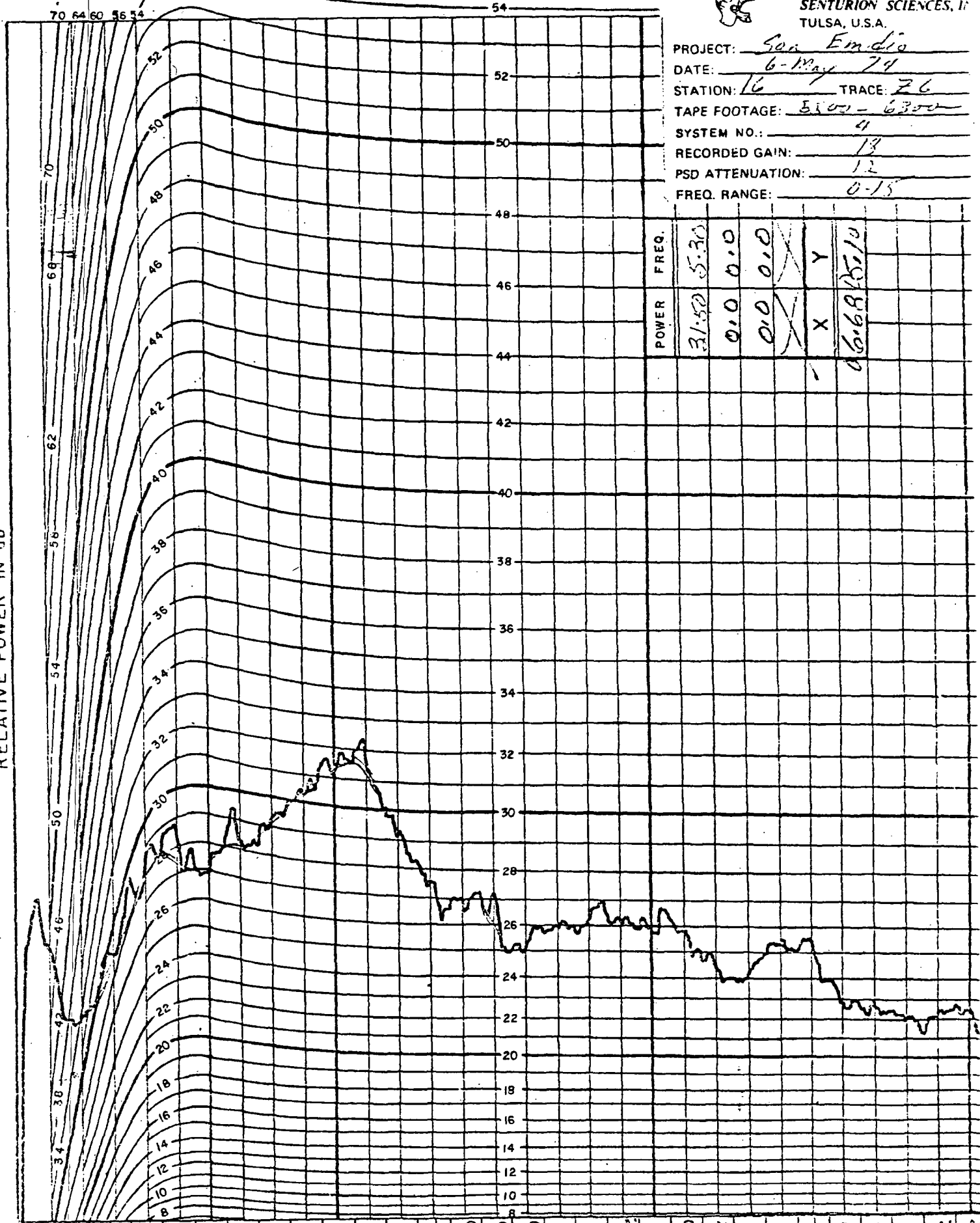
END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: Sea Em-dio
 DATE: 6-May 79
 STATION: 16 TRACE: 26
 TAPE FOOTAGE: 5100-6300
 SYSTEM NO.: 4
 RECORDED GAIN: 13
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



POWER	FREQ.
31.50	5.30
0.0	0.0
0.0	0.0
X	Y
0.668	15.10

0.076
 50.0
 34.0
 29.0
 28.0
 27.5
 27.0
 28.1
 29.0
 30.1
 31.2
 31.2
 29.2
 27.5
 27.0
 26.0
 25.0
 26.0
 26.1
 26.2
 25.8
 25.8
 24.4
 24.1
 25.3
 25.5
 22.8
 22.7
 22.0
 22.2
 22.2

HS-10 2000 Ω Absolute

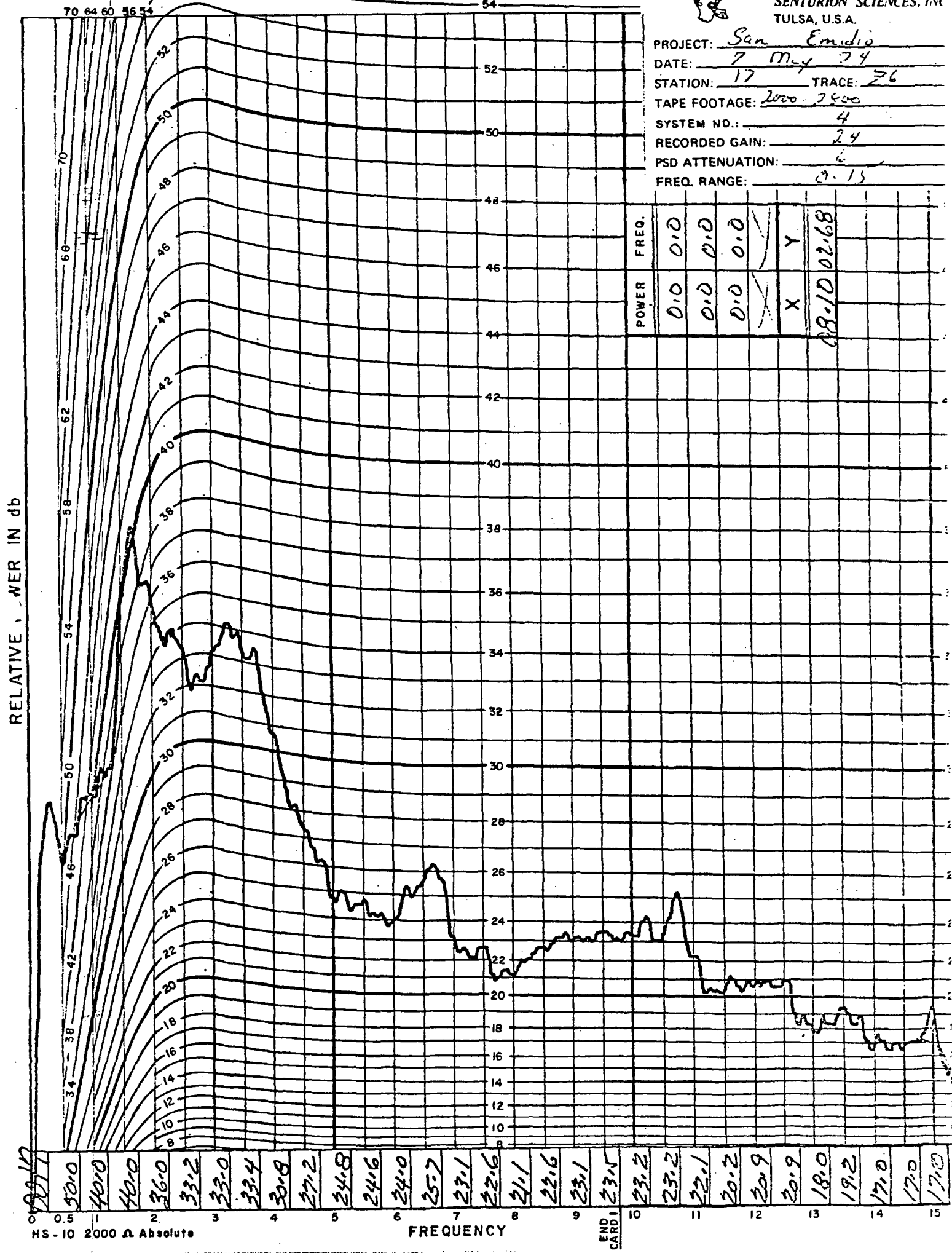
FREQUENCY

END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 7 May 74
 STATION: 17 TRACE: 26
 TAPE FOOTAGE: 2000-2400
 SYSTEM NO.: 4
 RECORDED GAIN: 24
 PSD ATTENUATION: 6
 FREQ. RANGE: 0.15



POWER	FREQ.	
0.0	0.0	
0.0	0.0	
0.0	0.0	
X	Y	
		18-10 02.68

0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

HS - 10 2000 Ω Absolute

FREQUENCY

END CARD 1

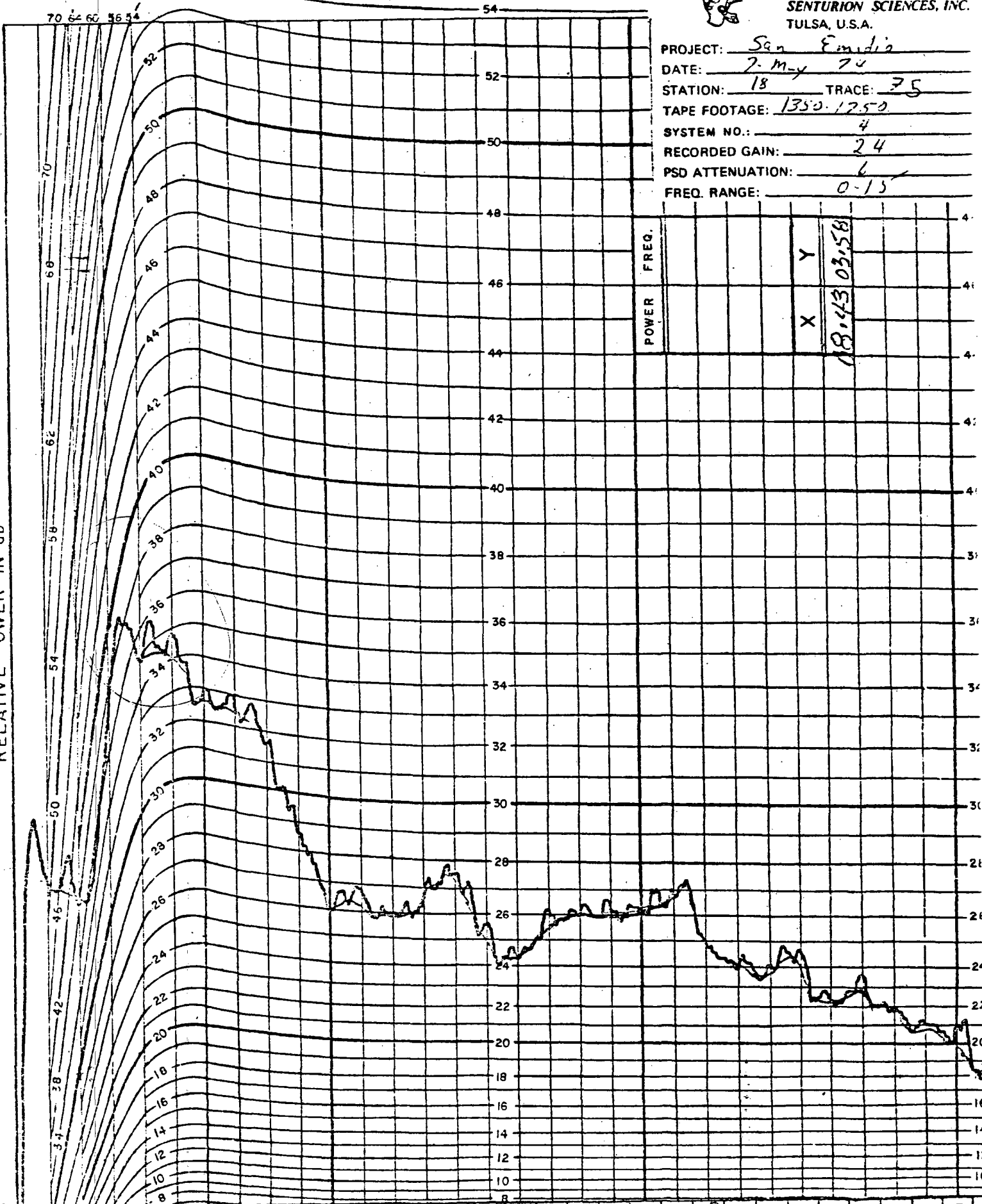
30.0
33.2
33.0
33.4
30.8
27.2
24.8
24.6
24.0
25.7
23.1
22.6
21.1
22.6
23.1
23.5
23.2
23.2
22.1
20.2
20.9
20.9
18.0
19.2
17.0
17.0
17.0



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 2-May 74
 STATION: 18 TRACE: 75
 TAPE FOOTAGE: 1350-1750
 SYSTEM NO.: 4
 RECORDED GAIN: 24
 PSD ATTENUATION: 6
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



POWER	FREQ.
X	18.43
Y	03.58

0	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
34.0	33.0	32.0	31.0	30.0	29.0	28.0	27.0	26.0	25.0	24.3	23.7	23.0	22.4	21.8	21.0	20.0

HS-10 2000 Ω Absolute

FREQUENCY

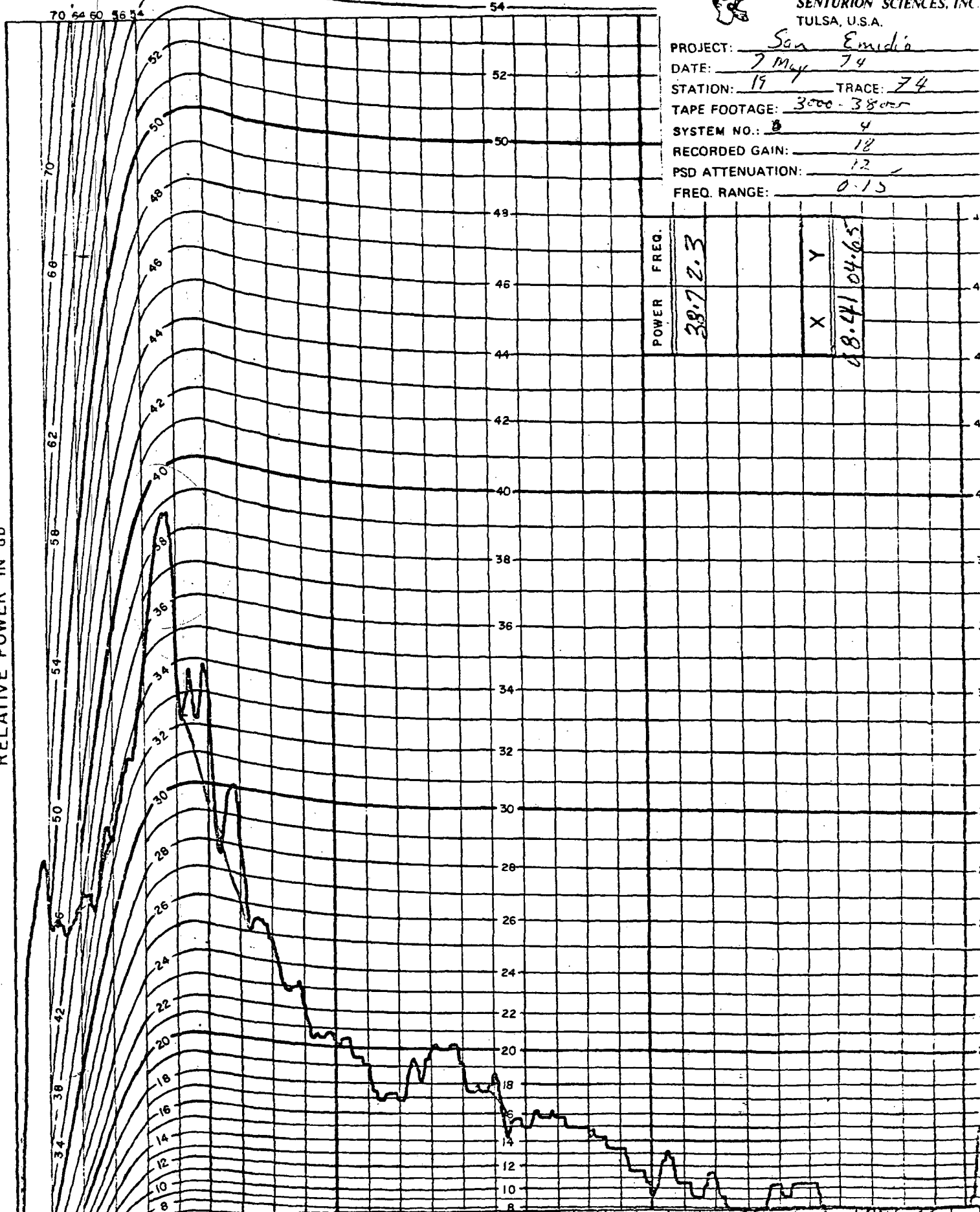
END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emedia
 DATE: 7 May 74
 STATION: 19 TRACE: 74
 TAPE FOOTAGE: 3000-3800
 SYSTEM NO.: 0 4
 RECORDED GAIN: 18
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15

RELATIVE POWER IN db



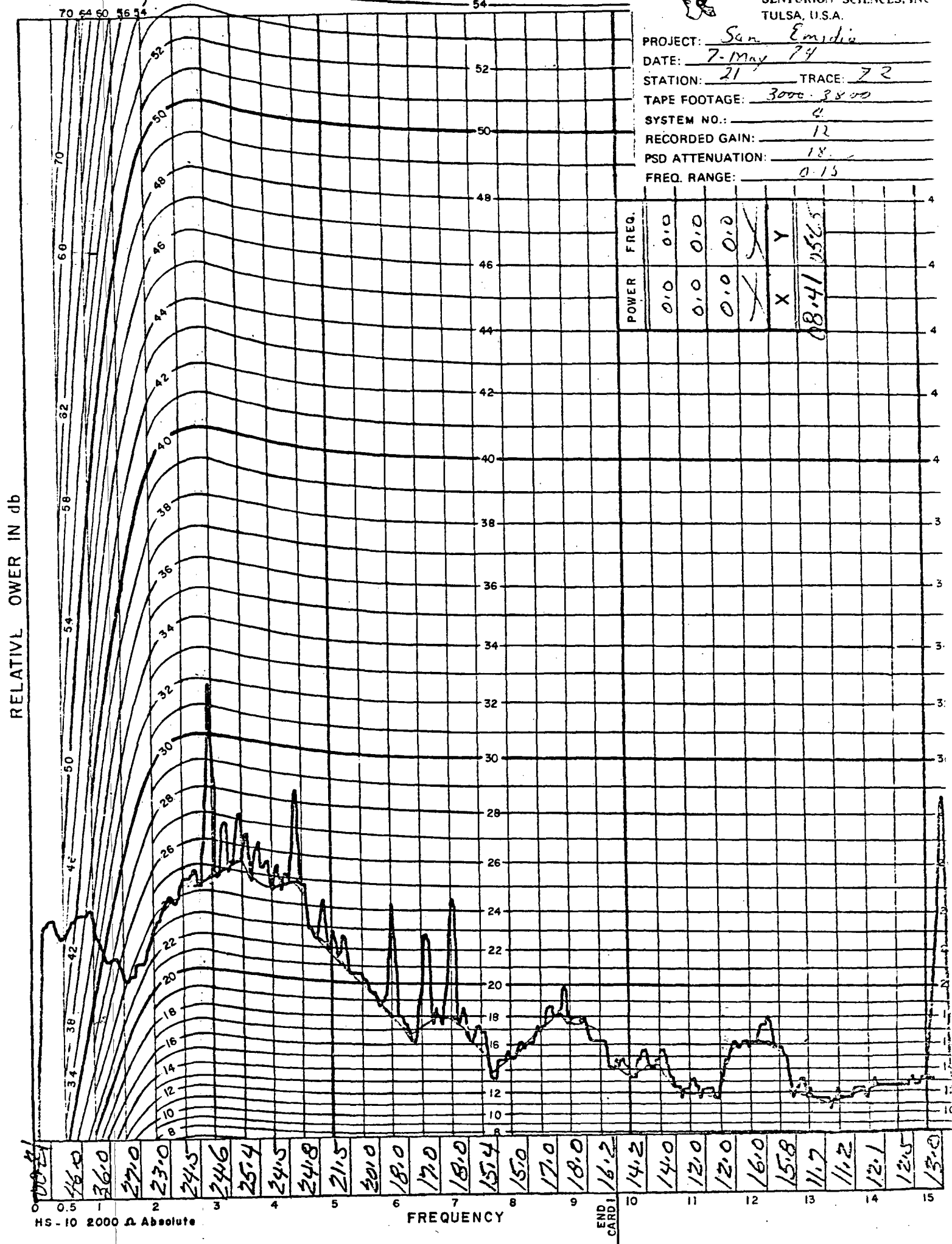
POWER	FREQ.
38.7	2.3
X	Y
28.41	10.5

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 50.0 38.0 37.0 35.0 34.0 29.2 26.0 24.9 22.0 20.1 19.0 17.0 20.0 19.0 17.0 15.0 15.9 15.0 13.3 10.0 10.5 11.0 08.5 10.0 10.3 06.0 06.0 06.0 08.0 08.0
 HS-10 2000 Ω Absolute
 FREQUENCY
 END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emedia
 DATE: 7-May 74
 STATION: 21 TRACE: 72
 TAPE FOOTAGE: 3000-3800
 SYSTEM NO.: 4
 RECORDED GAIN: 12
 PSD ATTENUATION: 18
 FREQ. RANGE: 0-15



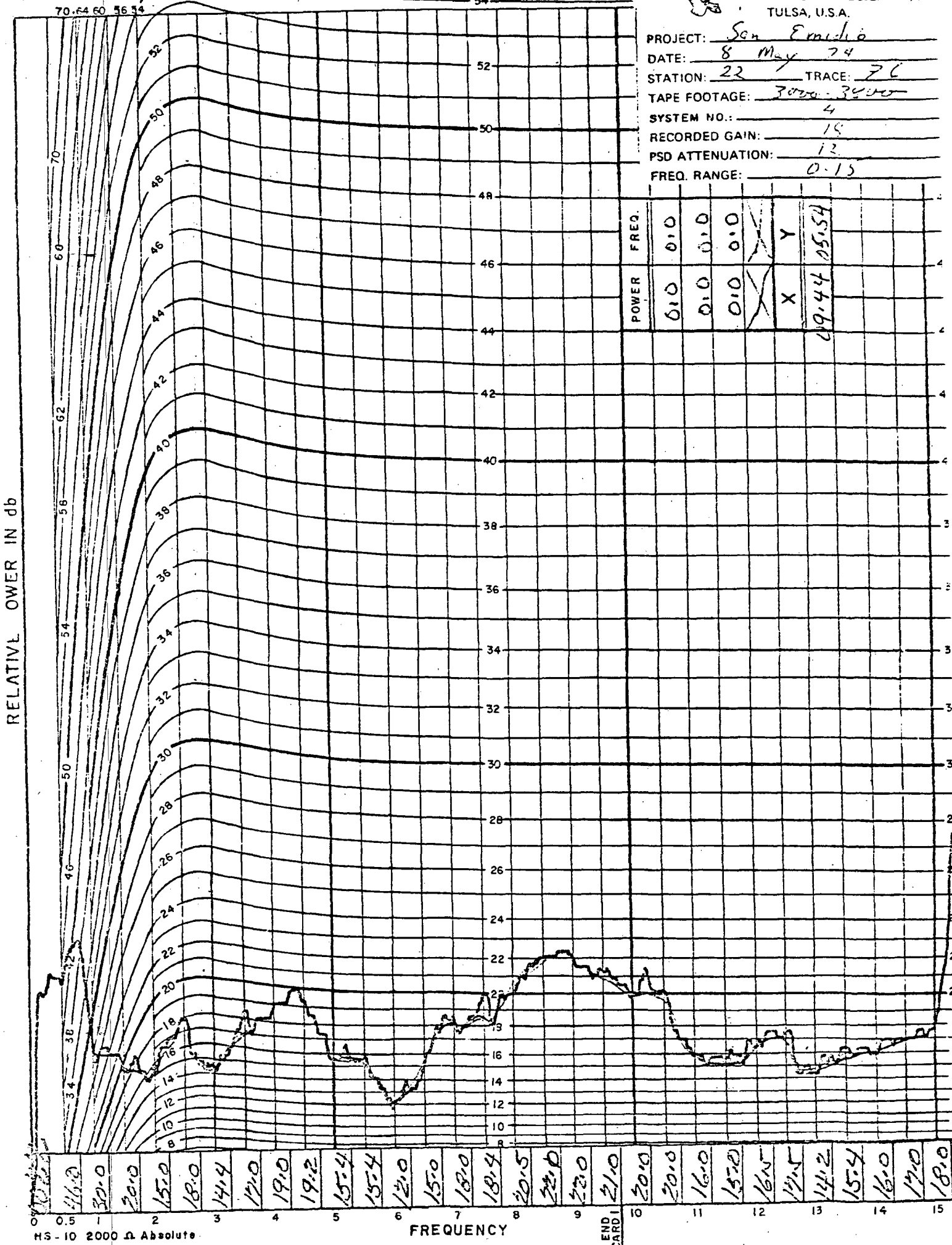
RELATIVE POWER IN dB

0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 HS-10 2000 Ω Absolute
 FREQUENCY
 END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 8 May 74
 STATION: 22 TRACE: 7C
 TAPE FOOTAGE: 3000-3400
 SYSTEM NO.: 4
 RECORDED GAIN: 15
 PSD ATTENUATION: 12
 FREQ. RANGE: 0-15



RELATIVE POWER IN db

FREQUENCY

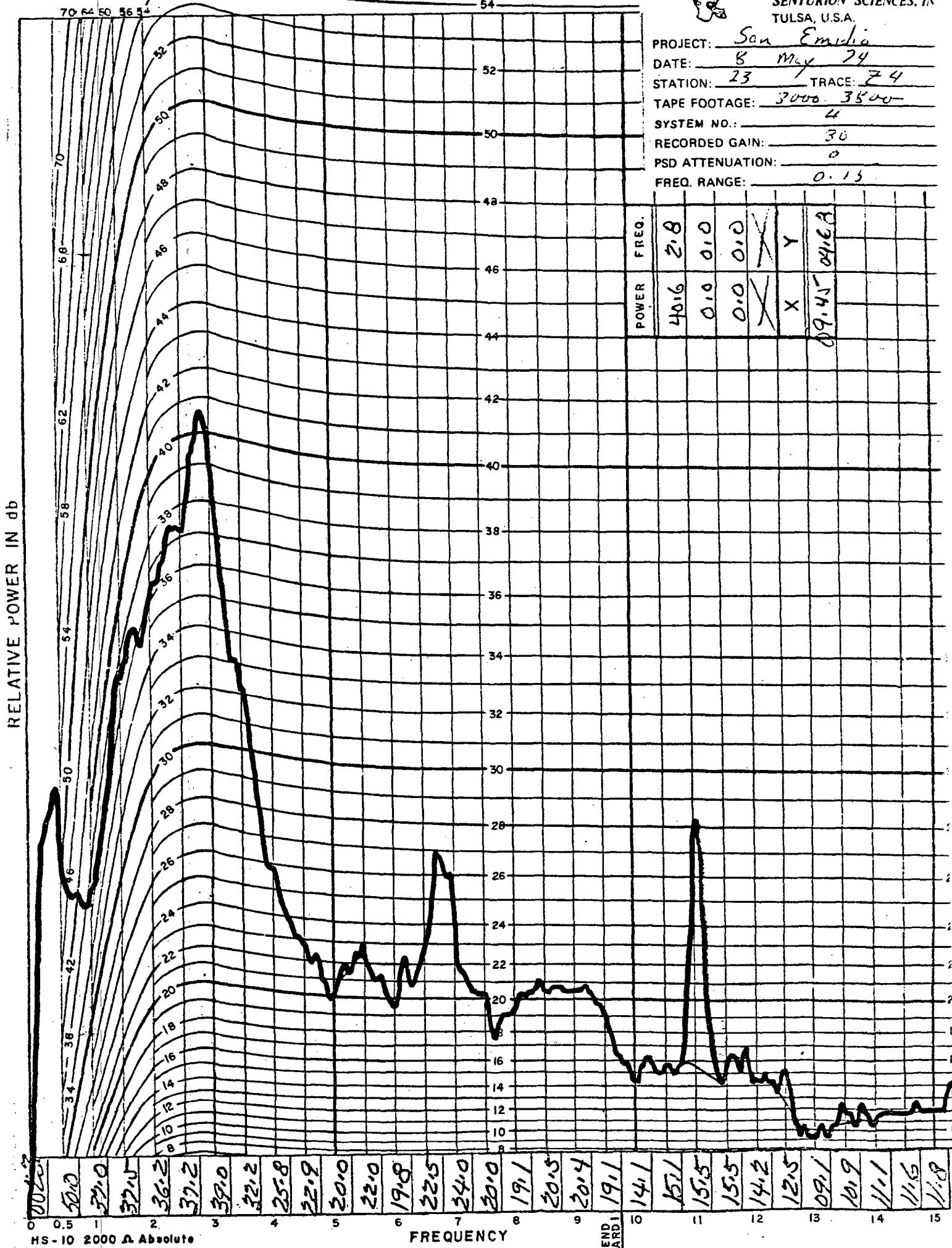
HS-10 2000 Ω Absolute

END CARD



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emilia
 DATE: 8 May 74
 STATION: 23 TRACE: 74
 TAPE FOOTAGE: 3000-3500-
 SYSTEM NO.: 4
 RECORDED GAIN: 30
 PSD ATTENUATION: 0
 FREQ. RANGE: 0.13



POWER	FREQ.
40.6	2.8
0.0	0.0
0.0	0.0
X	X
X	Y
09.45	04.63

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

HS-10 2000 Ω Absolute

FREQUENCY

END CARD 1

0020
 50.0
 37.0
 37.0
 36.2
 37.2
 39.0
 32.2
 25.8
 22.9
 20.0
 22.0
 19.8
 22.5
 24.0
 20.0
 19.1
 20.5
 20.4
 19.1
 14.1
 15.7
 15.5
 15.5
 14.2
 12.5
 09.1
 10.9
 11.1
 11.6
 11.8

70 64 60 56 54

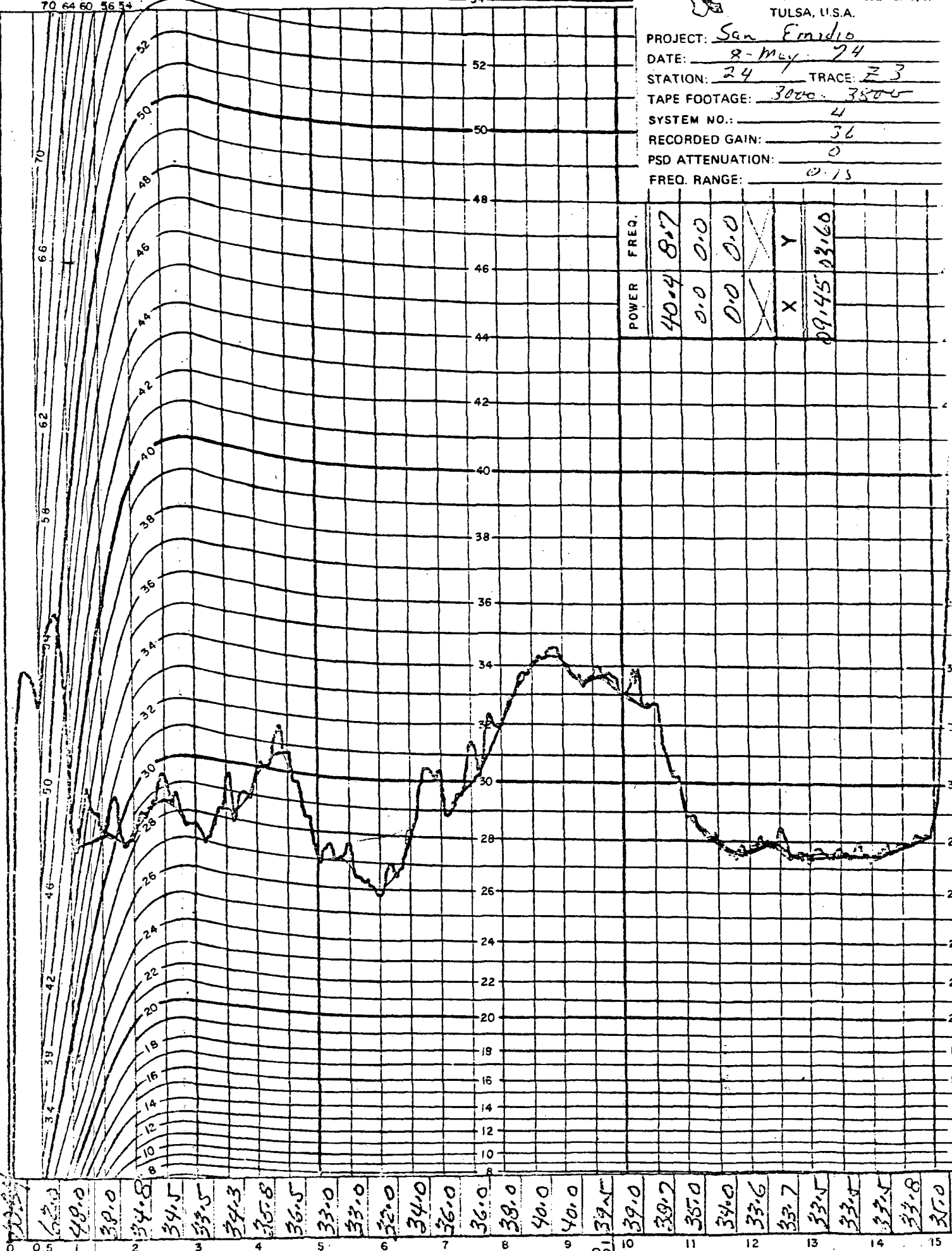
54



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 2-May-74
 STATION: 24 TRACE: F3
 TAPE FOOTAGE: 3000-3500
 SYSTEM NO.: 4
 RECORDED GAIN: 36
 PSD ATTENUATION: 0
 FREQ. RANGE: 0.15

RELATIVE POWER IN db



POWER	FREQ.
40.4	8.7
0.0	0.0
0.0	0.0
X	X
X	Y
09.45	03.60

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

34.0 34.8 34.5 33.5 34.3 35.8 36.5 33.0 33.0 32.0 34.0 36.0 36.0 38.0 40.0 40.0 39.5 39.0 38.7 35.0 34.0 33.6 33.7 33.5 33.5 33.5 33.8 35.0

HS-10 2000 Ω Absolute

FREQUENCY

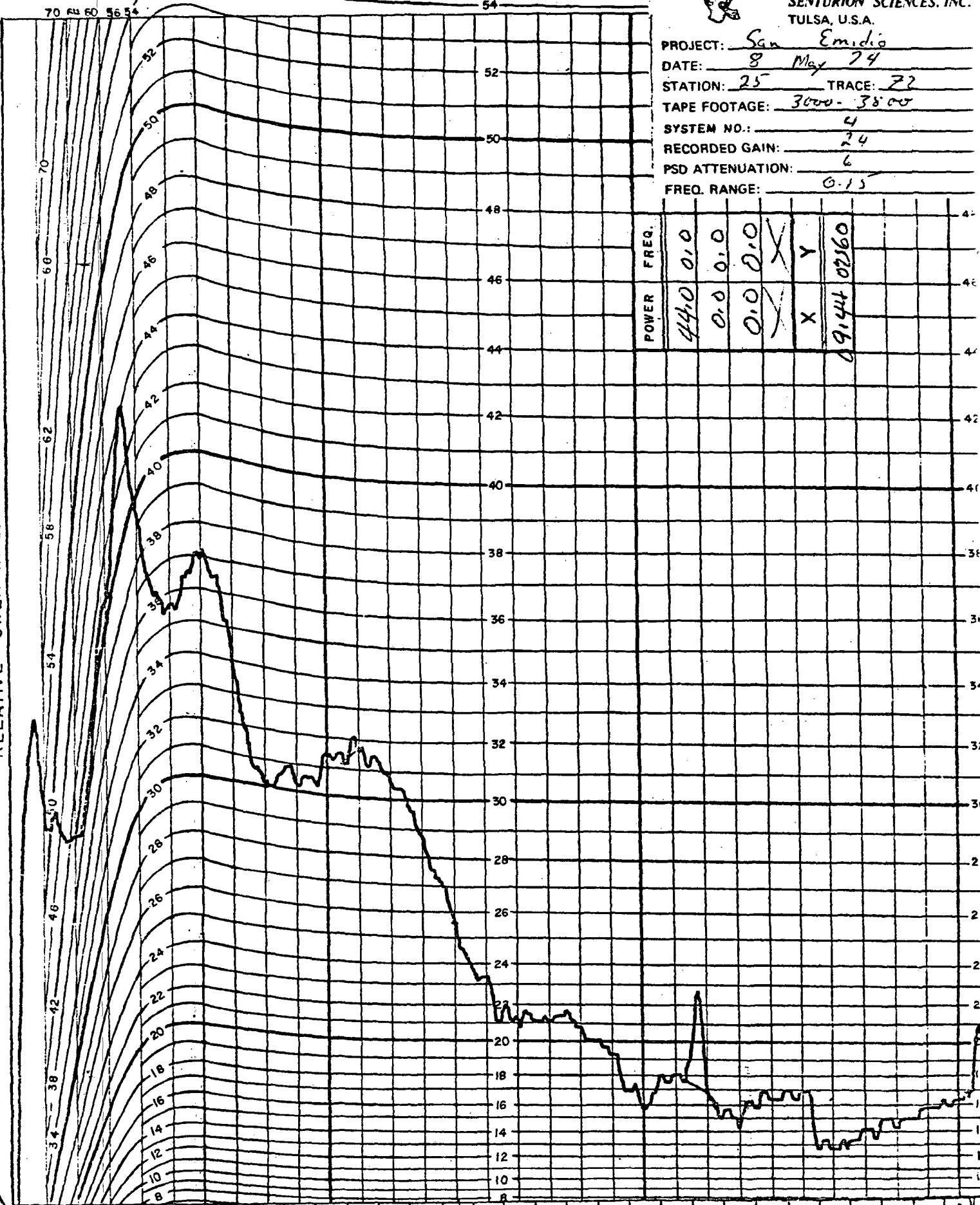
6 db low



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 8 May 74
 STATION: 25 TRACE: 72
 TAPE FOOTAGE: 3600 - 3800
 SYSTEM NO.: 4
 RECORDED GAIN: 24
 PSD ATTENUATION: 6
 FREQ. RANGE: 0.15

RELATIVE POWER IN db



Frequency	Relative Power (dB)
0.5	34
1.0	40.0
1.5	40.8
2.0	39.0
2.5	35.0
3.0	37.0
3.5	34.0
4.0	30.1
4.5	30.2
5.0	31.4
5.5	31.6
6.0	30.8
6.5	30.8
7.0	25.5
7.5	23.2
8.0	21.0
8.5	21.1
9.0	20.9
9.5	19.1
10.0	16.0
10.5	18.0
11.0	17.0
11.5	15.0
12.0	16.3
12.5	16.9
13.0	12.8
13.5	14.0
14.0	14.2
14.5	15.9
15.0	16.2

HS-10 2000 Δ Absolute

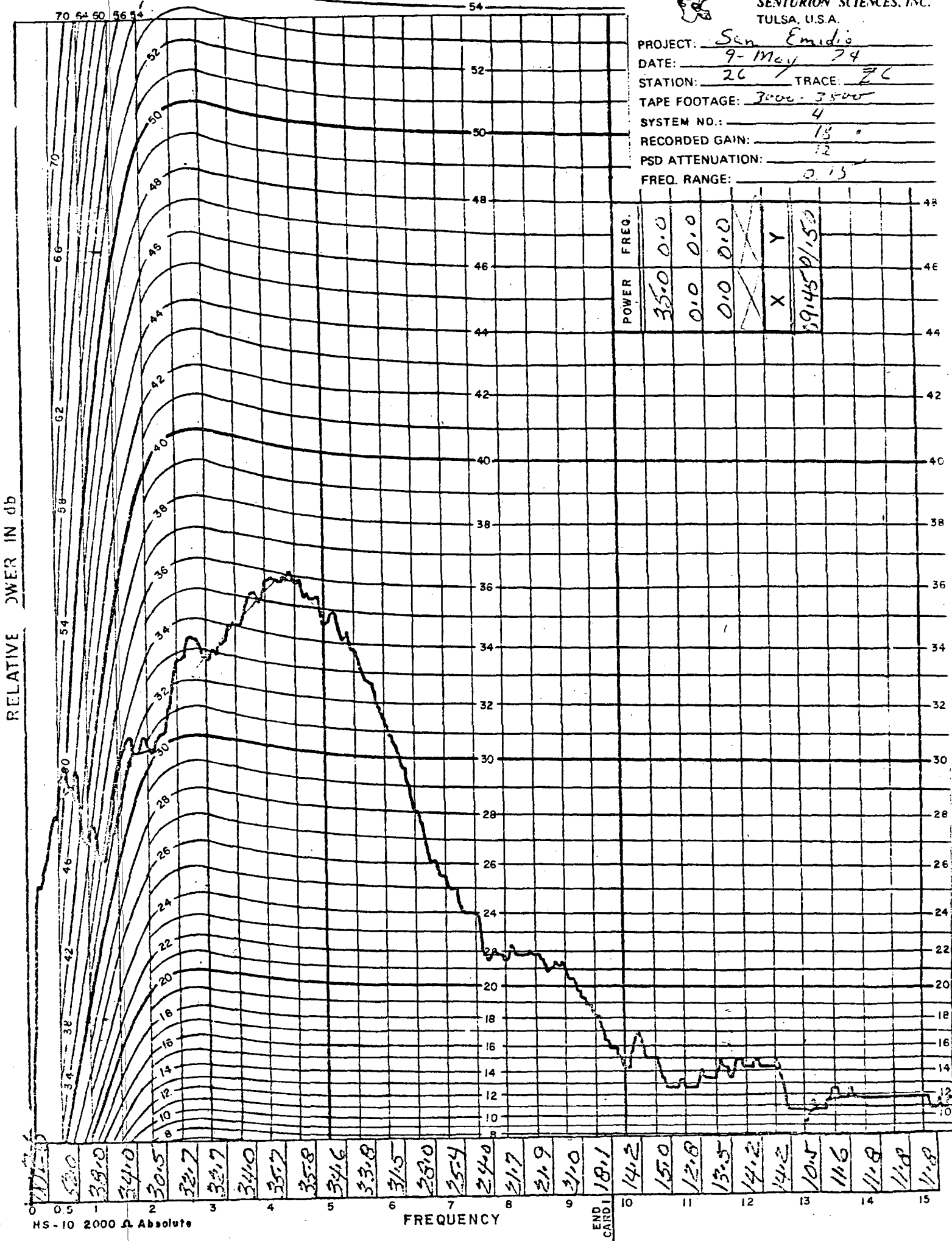
FREQUENCY

END CARD 1



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emedio
 DATE: 9-May 74
 STATION: 26 TRACE: 7C
 TAPE FOOTAGE: 3000-3500
 SYSTEM NO.: 4
 RECORDED GAIN: 15
 PSD ATTENUATION: 12
 FREQ. RANGE: 0.15



RELATIVE POWER IN dB

HS-10 2000 Absolute

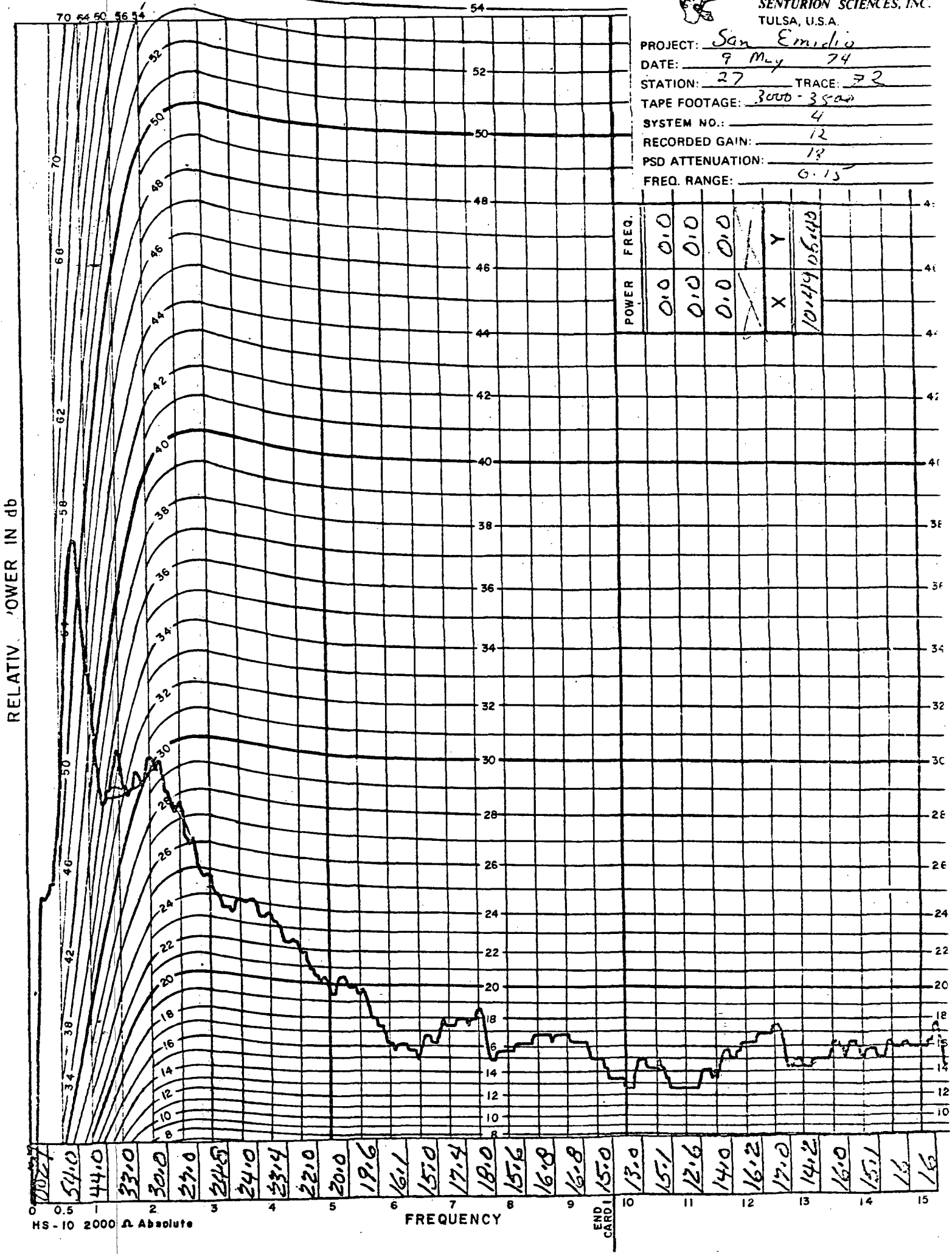
FREQUENCY

END CARD

0 0.5 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
 11.8 11.8 11.8 11.6 10.5 14.2 14.2 13.5 12.8 15.0 14.2 18.1 31.0 31.9 31.7 24.0 35.4 38.0 31.5 33.8 34.6 35.8 35.7 34.0 33.7 32.7 30.5 34.0 38.0 52.0



PROJECT: San Emidio
 DATE: 9 May 74
 STATION: 27 TRACE: 72
 TAPE FOOTAGE: 3000-3500
 SYSTEM NO.: 4
 RECORDED GAIN: 12
 PSD ATTENUATION: 18
 FREQ. RANGE: 0.15

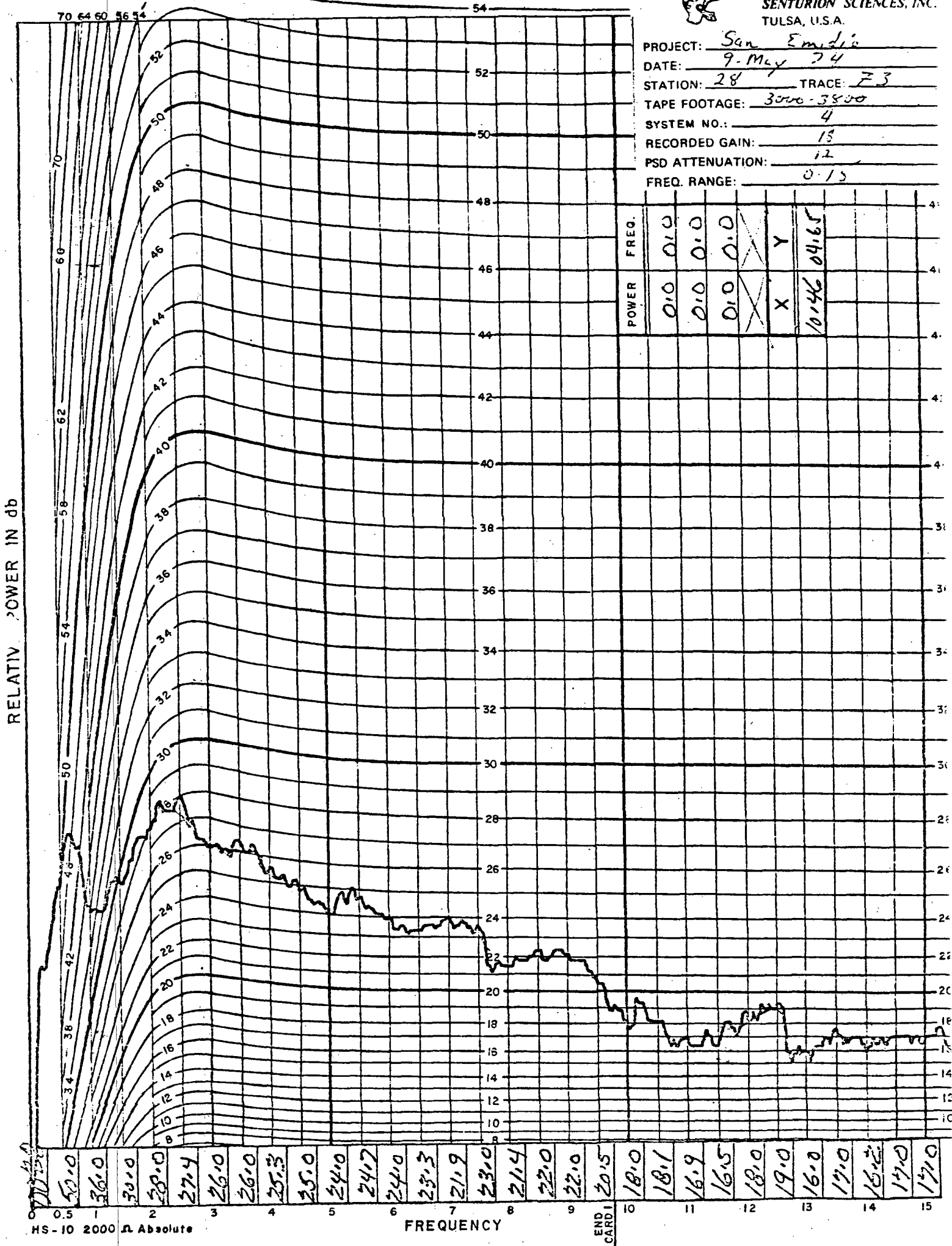


0.227	54.0	44.0	33.0	30.0	27.0	24.5	24.0	23.4	22.0	20.0	19.6	16.1	15.0	17.4	18.0	15.6	16.8	16.8	15.0	13.0	15.1	12.6	14.0	16.2	17.0	14.2	16.0	15.1	16	16
-------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	----	----



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 9-May 74
 STATION: 28 TRACE: F3
 TAPE FOOTAGE: 3000-3500
 SYSTEM NO.: 4
 RECORDED GAIN: 15
 PSD ATTENUATION: 12
 FREQ. RANGE: 0.15



HS-10 2000 Ω Absolute

FREQUENCY

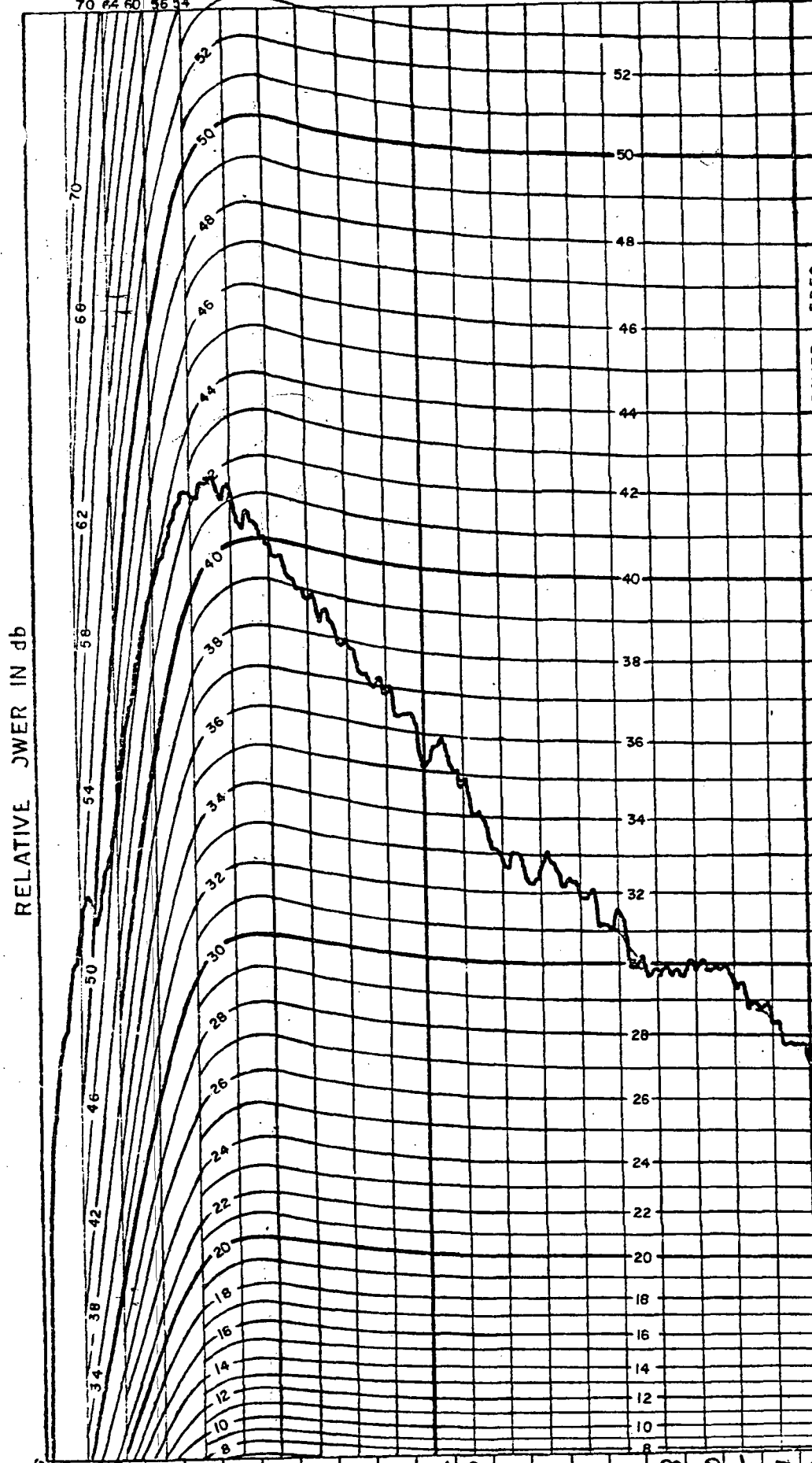
END CARD

(6 db low)



SENTURION SCIENCES, INC
TULSA, U.S.A.

PROJECT: Sep Emilio
 DATE: 8-May 70
 STATION: 29 TRACE: 24
 TAPE FOOTAGE: 2000-2505
 SYSTEM NO.: 4
 RECORDED GAIN: 30
 PSD ATTENUATION: 0
 FREQ. RANGE: 0.15



POWER	FREQ.	
0.0	0.0	
0.0	0.0	
0.0	0.0	
X	X	
X	Y	
		10.45 03.62

6009
 60.0
 50.0
 50.0
 48.3
 47.0
 45.9
 44.9
 43.9
 43.0
 41.2
 40.8
 38.9
 38.7
 38.0
 37.0
 36.8
 37.0
 35.5
 34.4
 33.1
 32.6
 32.2
 31.7
 32.0
 31.7
 30.0
 30.2
 29.8
 29.5
 29.5

HS-10 2000 Δ Absolute

6 db low as plotted

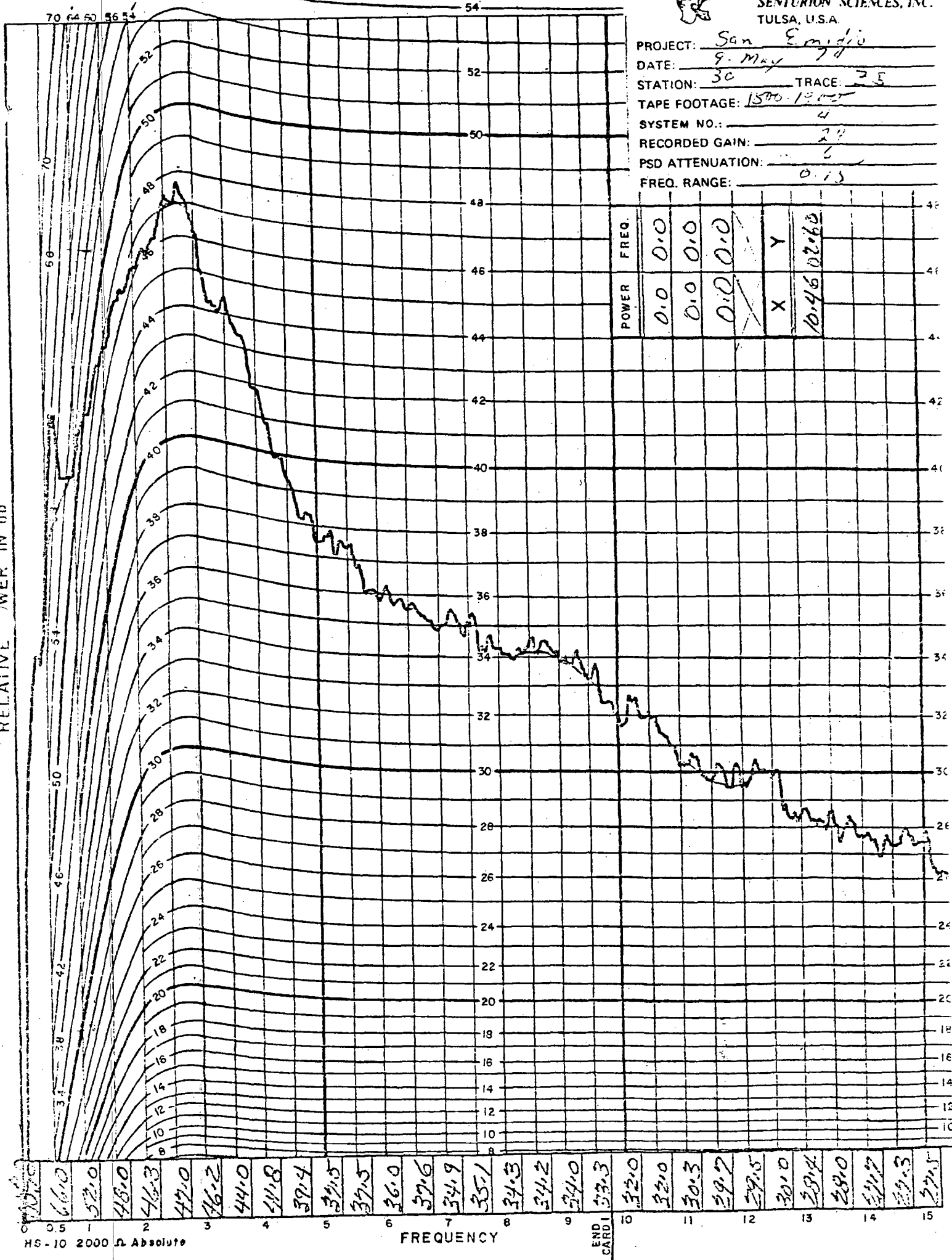
END CARD



SENTURION SCIENCES, INC.
TULSA, U.S.A.

PROJECT: San Emidio
 DATE: 9 May 74
 STATION: 30 TRACE: 25
 TAPE FOOTAGE: 1570-1905
 SYSTEM NO.: 4
 RECORDED GAIN: 24
 PSD ATTENUATION: 6
 FREQ. RANGE: 0.15

RELATIVE POWER IN db



HS-10 2000 Ω Absolute

FREQUENCY

END CARD 3