

CRAWFORD  
BROADCASTING  
COMPANY

KFMK-FM Radio 98 ■ 1900 Medical Towers Bldg. ■ Houston, Texas 77030 ■ (713) 797-9850

RADIO STATION KFMK  
PROOF OF PERFORMANCE MEASUREMENTS  
October 1978

Ronald D. Haney  
Chief Engineer

Executive Offices  
Flourtown, Pa.  
Corporate Offices  
Dallas, Texas  
WDJC-FM Radio  
Birmingham, Alabama  
WDCX-FM Radio  
Buffalo, New York  
KPBC-AM Radio  
Dallas, Texas  
WMUZ-FM Radio  
Detroit, Michigan  
KELR-AM Radio  
El Reno, Oklahoma  
WYCA-FM Radio  
Hammond, Indiana  
KFMK-FM Radio  
Houston, Texas  
WDAC-FM Radio  
Lancaster, Pa.  
WWGM-AM Radio  
Nashville, Tennessee  
WPEO-AM Radio  
Peoria, Illinois  
WYRD-AM Radio  
Syracuse, New York

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November 2, 1978

The following equipment performance measurements for Radio Station KFMK were conducted on the nights of October 21 and October 29, 1978 between 12 midnight and 6am. All measurements were made by, or directly under the supervision of Ronald D. Haney (license # P1-9-11388) chief engineer of KFMK. Kevin R. Wyne and Michael D. Eggebrecht both third class operators regularly employed by KFMK as announcer/operators assisted in the tests. The test equipment specified in the attached equipment list was used for all of the measurements and was connected as shown in the accompanying equipment connection diagram.

Prior to its use, the test equipment frequency response was checked and found to be within 0.1 dB from 30 hertz to 30,000 hertz. The residual hum and noise and distortion contained in the audio generator and harmonic distortion analyzer combined was measured at 0.05%.

All station equipment was adjusted for normal operation and all equipment used in the system between the microphone input and the transmitting antenna was included in the tests. The compression of the Collins 26U-2 was disabled by removing the tubes producing the control voltage. The Tapco reverberation unit and the UREI equalizer were disabled by switching them "out". The CBS 4110 was put in the test position. Measurements were made for each of the stereo channels with the transmitter in the stereo mode. The right channel was selected on the exciter for all mono tests.

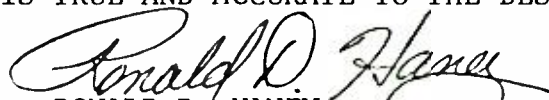
The frequency response of the system was measured by adjusting the audio generator to produce the modulation level indicated with the modulating frequencies indicated (1000 hertz reference) and varying the frequency while recording the generator output required to produce the same modulation level.

The harmonic distortion was measured by adjusting the audio generator to produce the modulation indicated with the modulating frequencies indicated, and measuring the distortion at the modulation monitor instrument output terminals.

The FM s/n ratio is given relative to 400 hertz at 100% modulation. The AM noise and crosstalk were measured with the modulation monitor located at the transmitter site.

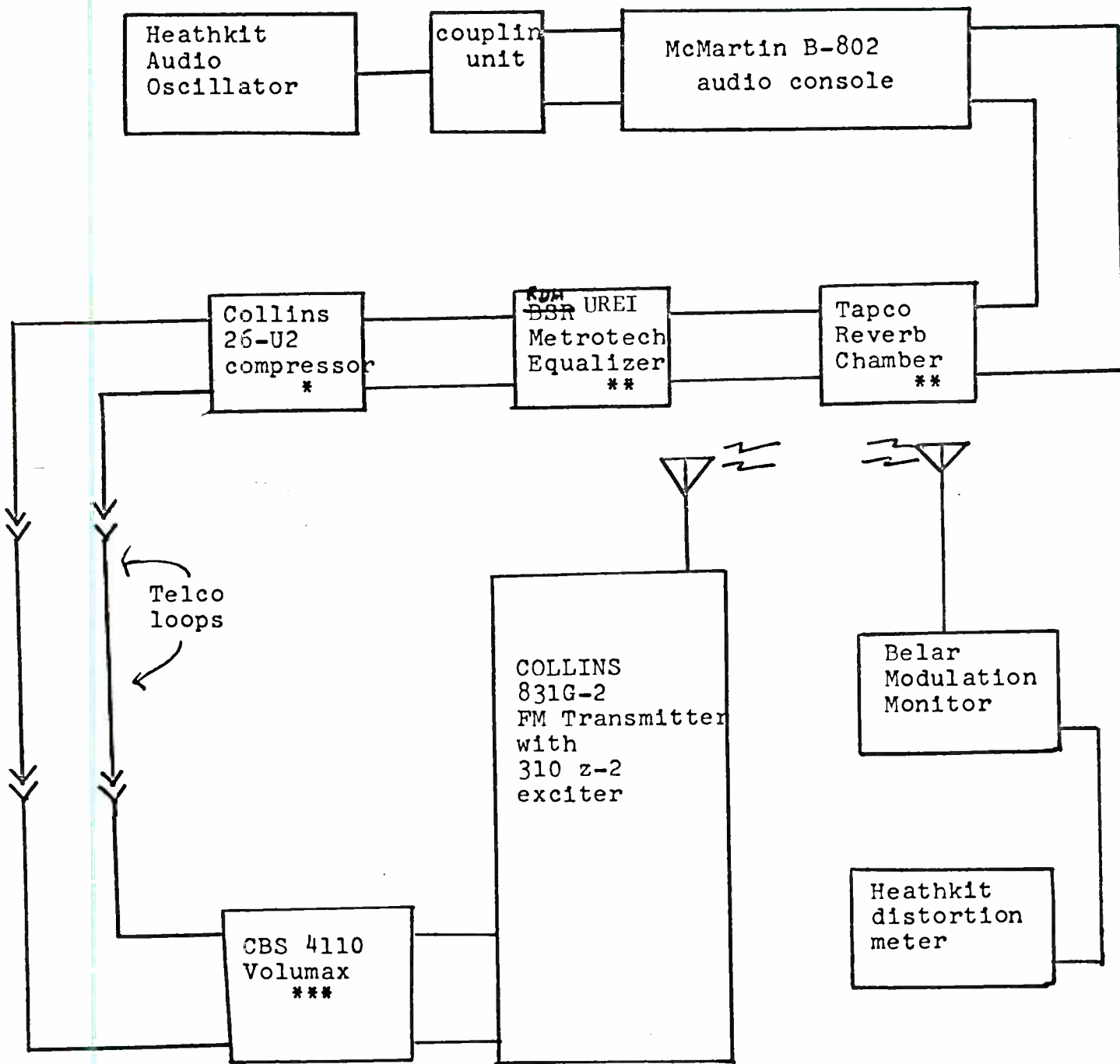
Stereo separation was measured by modulating each channel (l or r) with modulating frequencies indicated while measuring leakage into the unmodulated channel.

ALL DATE CONTAINED HEREIN IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

  
RONALD D. HANEY  
Chief Engineer KFMK RADIO

Executive Offices  
Flourtown, Pa.  
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WDJC-FM Radio  
Birmingham, Alabama  
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Hammond, Indiana  
KFMK-FM Radio  
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WDAC-FM Radio  
Lancaster, Pa.  
WVGM-AM Radio  
Nashville, Tennessee  
WPEO-AM Radio  
Peoria, Illinois  
WYRD-AM Radio  
Syracuse, New York

EQUIPMENT CONNECTION  
DIAGRAM



- \* The 26U-2 was patched out for measurements. ROM
- \*\* The equalizer and reverb were switched out for measurements.
- \*\*\* The volumax was placed in the test position for measurements.

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

FREQUENCY RESPONSE MEASUREMENTS

100% Modulation

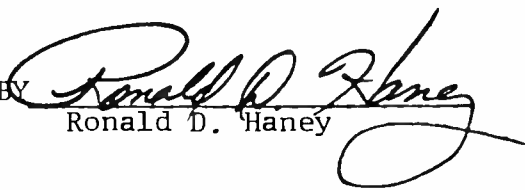
FREQUENCY	MONO	LEFT	RIGHT
50 HERTZ	+2.7	+3.5	+1.0
100 HERTZ	+2.2	+2.8	+2.2
250 HERTZ	+2.0	+2.0	+2.1
400 HERTZ	+1.5	+2.0	+2.0
750 HERTZ	+0.7	+0.8	+1.1
1000 HERTZ	$\pm 0$	$\pm 0$	$\pm 0$
3000 HERTZ	-3.3	-3.6	-4.2
5000 HERTZ	-6.2	-8.0	-8.0
10,000 HERTZ	-11.5	-13.6	-13.8
15,000 HERTZ	-17.0	-16.5	-15.5

50% Modulation

50 HERTZ	+2.5	+3.0	+2.8
100 HERTZ	+2.1	+2.5	+2.2
250 HERTZ	+1.8	+2.0	+1.8
400 HERTZ	+1.3	+1.5	+1.5
750 HERTZ	+0.4	+0.8	+0.8
1000 HERTZ	$\pm 0$	$\pm 0$	$\pm 0$
3000 HERTZ	-3.7	-4.2	-4.2
5000 hertz	-6.5	-7.5	-7.8
10,000 HERTZ	-11.6	-12.2	-13.2
15,000 HERTZ	-16.8	-14.8	-16.0

READINGS INDICATED ARE THOSE OF THE OSCILLATOR AND MUST BE INVERTED FOR THE 75usec CURVE.

ALL READINGS TAKEN BY

  
Ronald D. Haney

RADIO STATION KFMK  
OCTOBER 1978

FREQUENCY RESPONSE MEASUREMENTS

25% Modulation

FREQUENCY	MONO	LEFT	RIGHT
50 HERTZ	+2.5	+3.2	+3.0
100 HERTZ	+2.0	+2.6	+2.3
400 HERTZ	+1.3	+1.5	+1.5
750 HERTZ	+0.6	+0.2	+1.0
1000 HERTZ	± 0	± 0	± 0
3000 HERTZ	-3.4	-4.0	-3.5
5000 HERTZ	-7.4	-7.2	-7.5
7500 HERTZ	-10.0	-10.0	-11.0
10,000 HERTZ	-12.2	-12.0	-12.9
15,000 HERTZ	-17.0	-14.5	-15.0

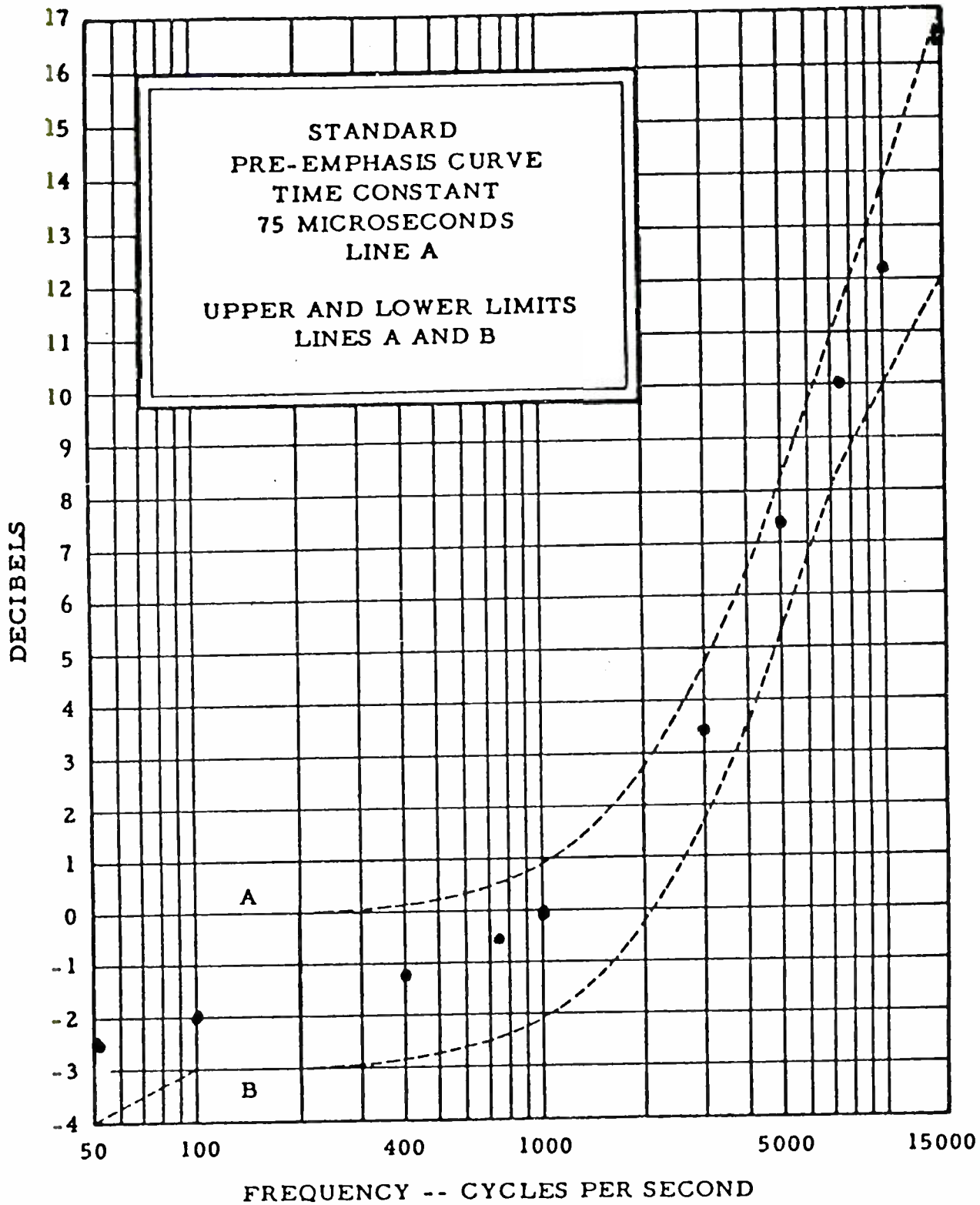
READINGS INDICATED ARE THOSE OF THE OSCILLATOR AND MUST BE INVERTED FOR THE 75usec CURVE.

ALL TESTS PERFORMED BY

Ronald D. Hany

DATE

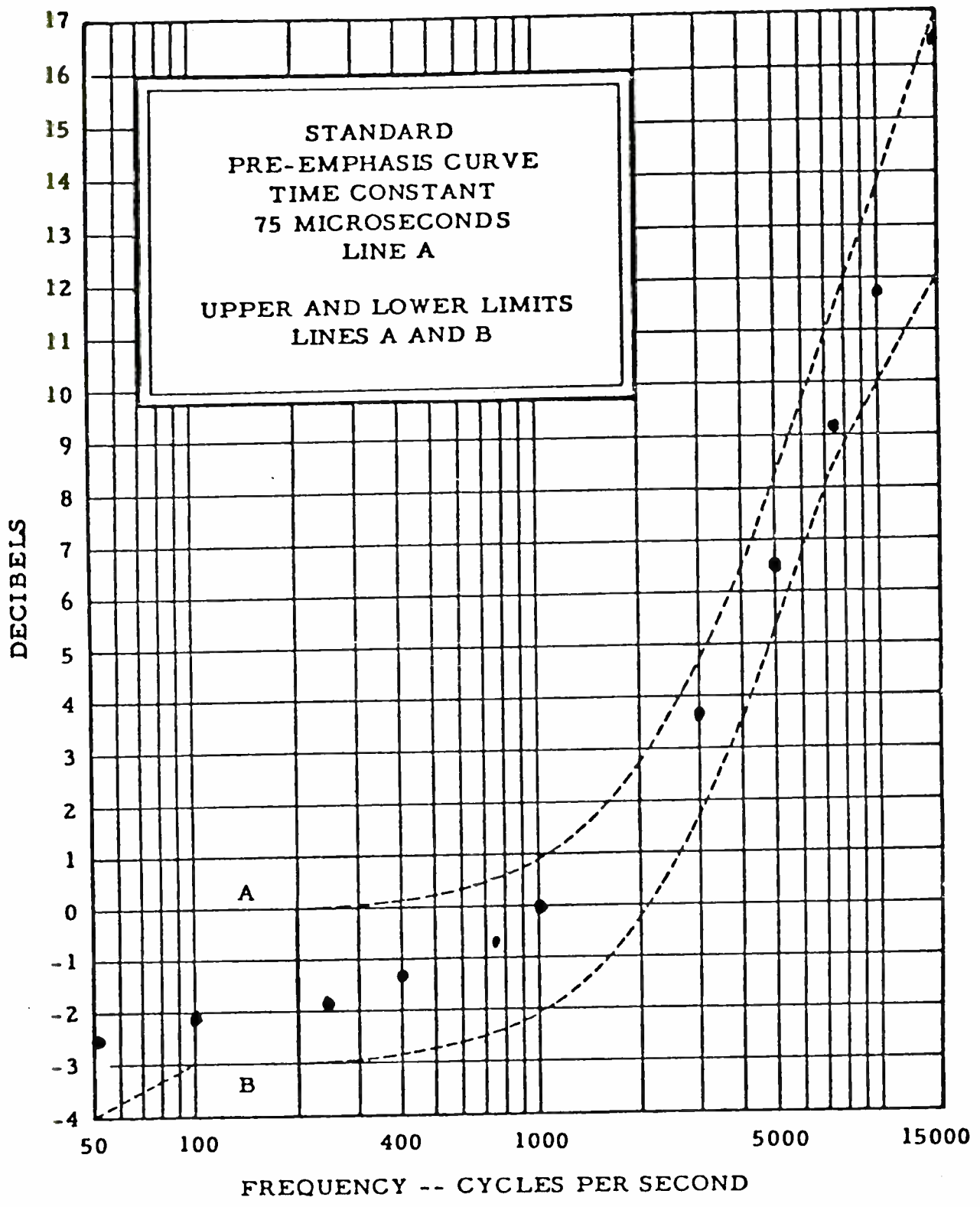
October 21, 1978



AUDIO FREQUENCY RESPONSE--- 25% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

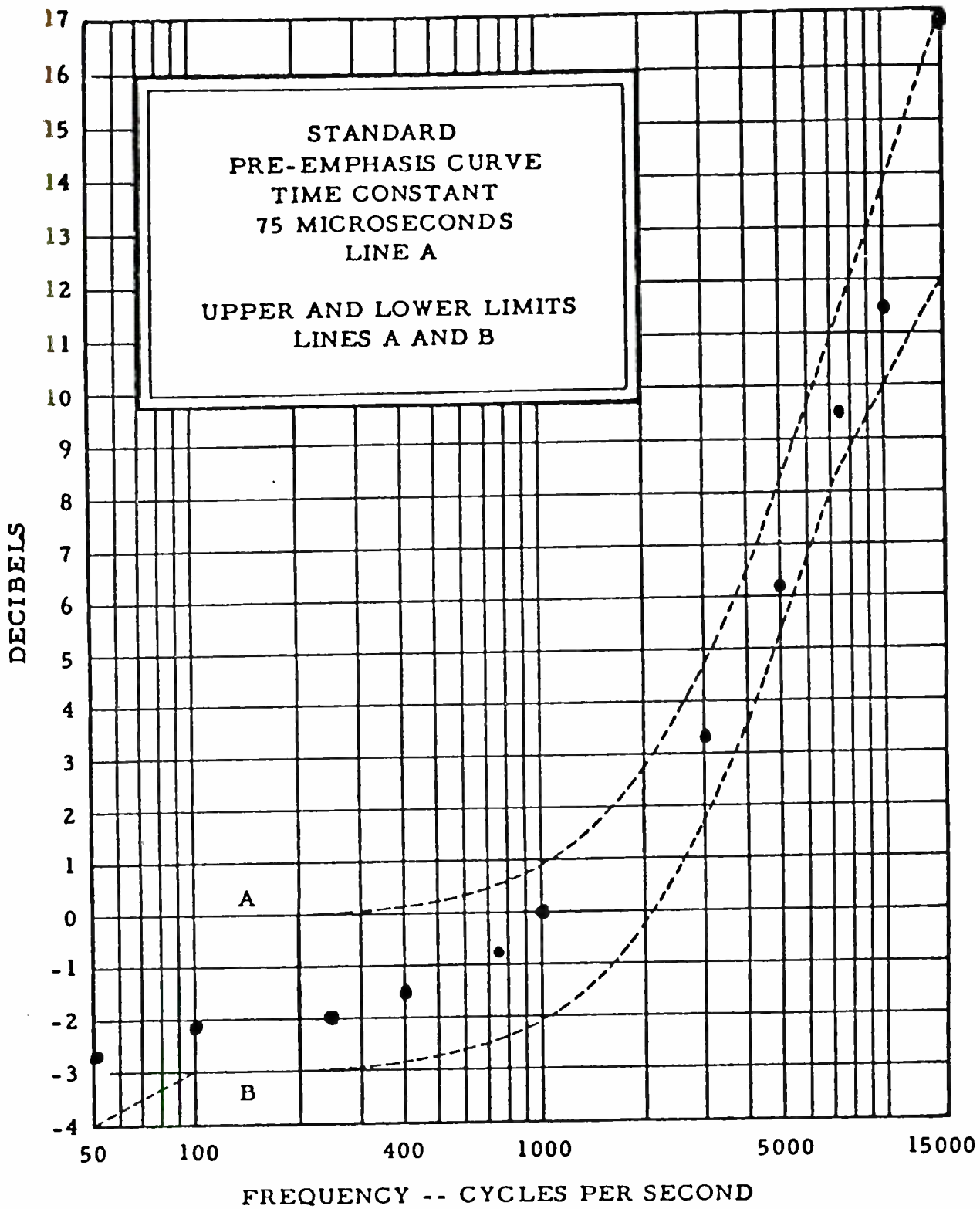
MONO CHANNEL



AUDIO FREQUENCY RESPONSE--- 50% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1977

MONO CHANNEL

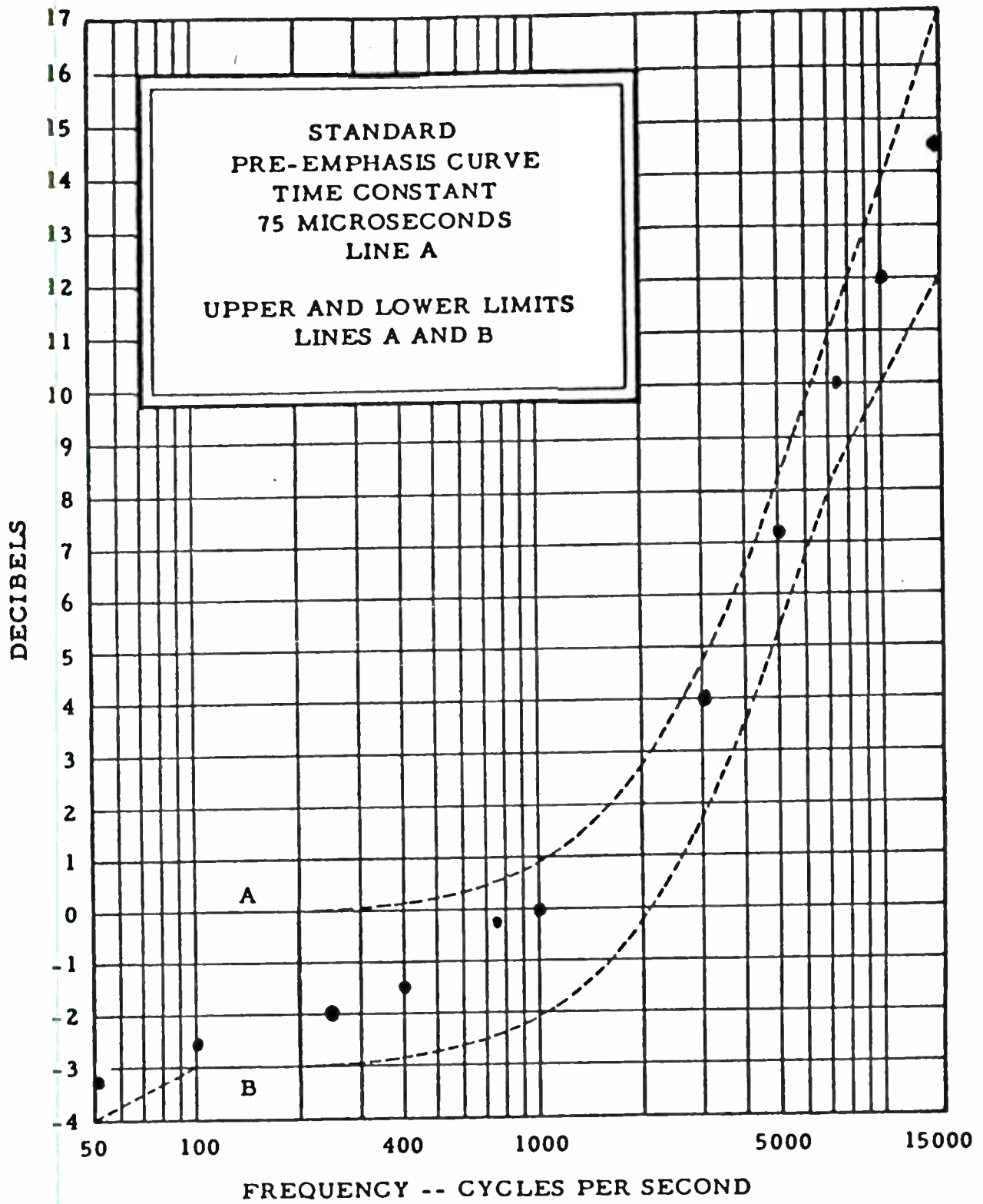


AUDIO FREQUENCY RESPONSE--100% MODULATION

RADIO STATION KFMK  
HOUSTON, TEXAS  
OCTOBER 1978

MONO CHANNEL

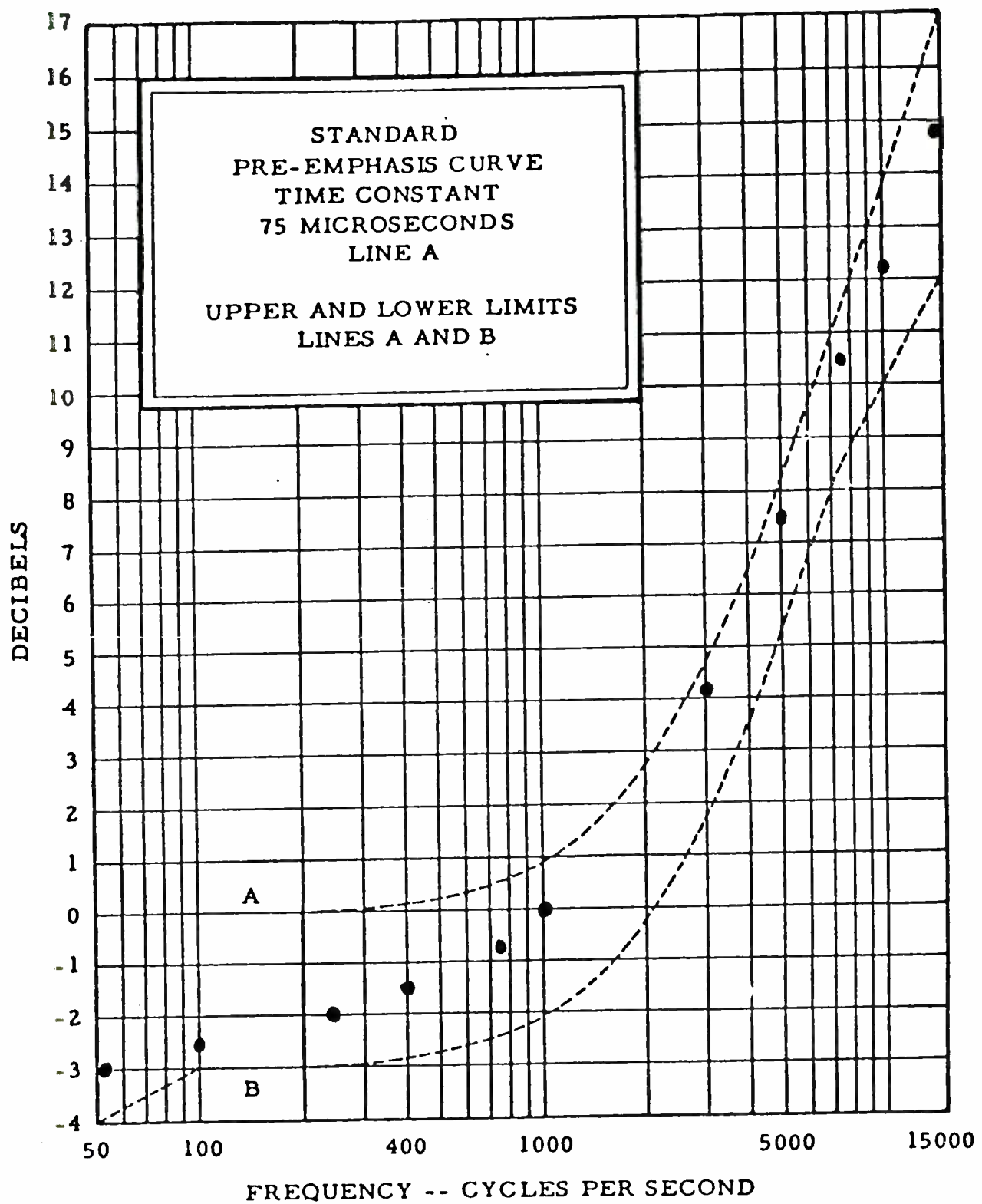




AUDIO FREQUENCY RESPONSE--- 25% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

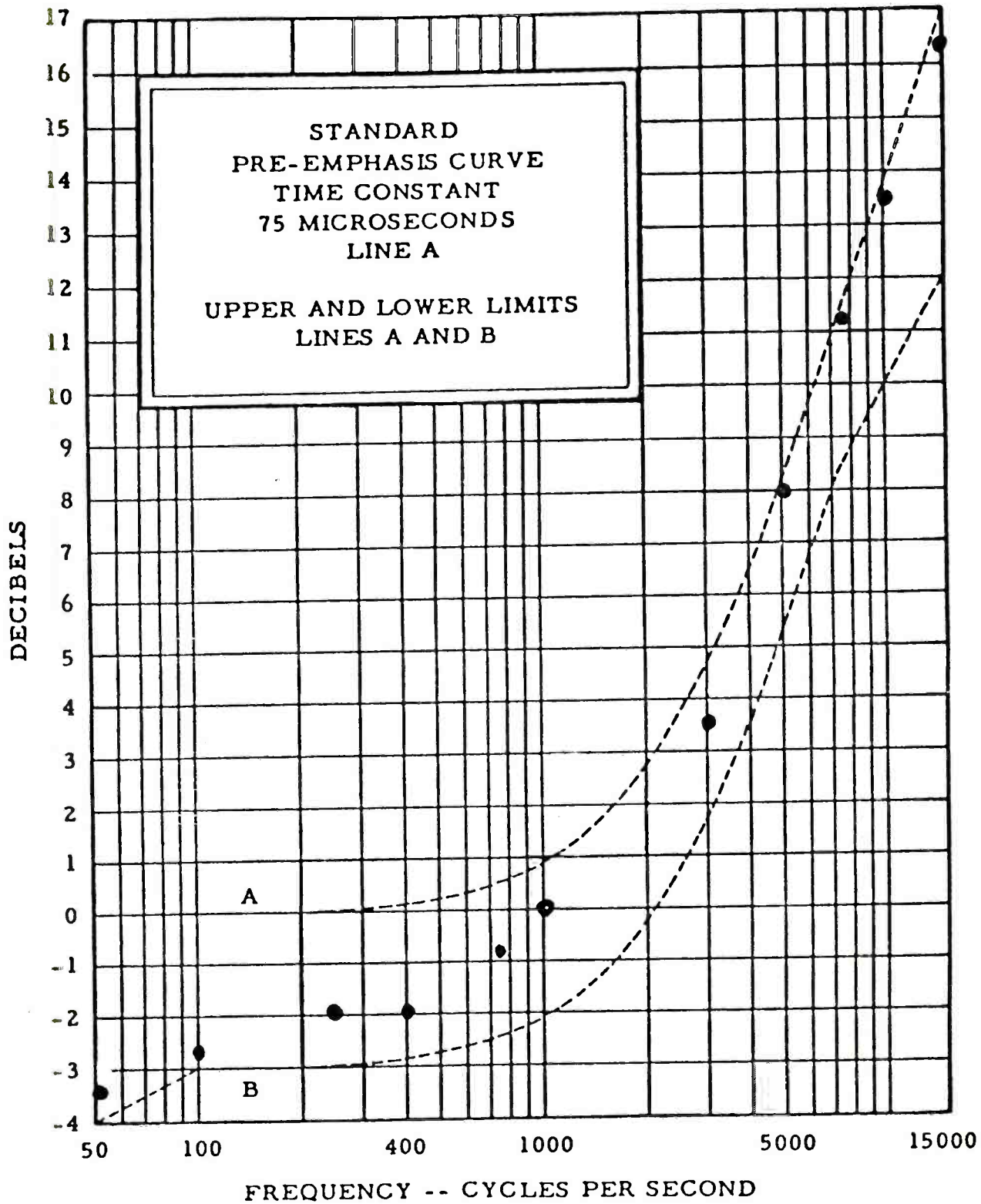
LEFT CHANNEL



AUDIO FREQUENCY RESPONSE--- 50% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

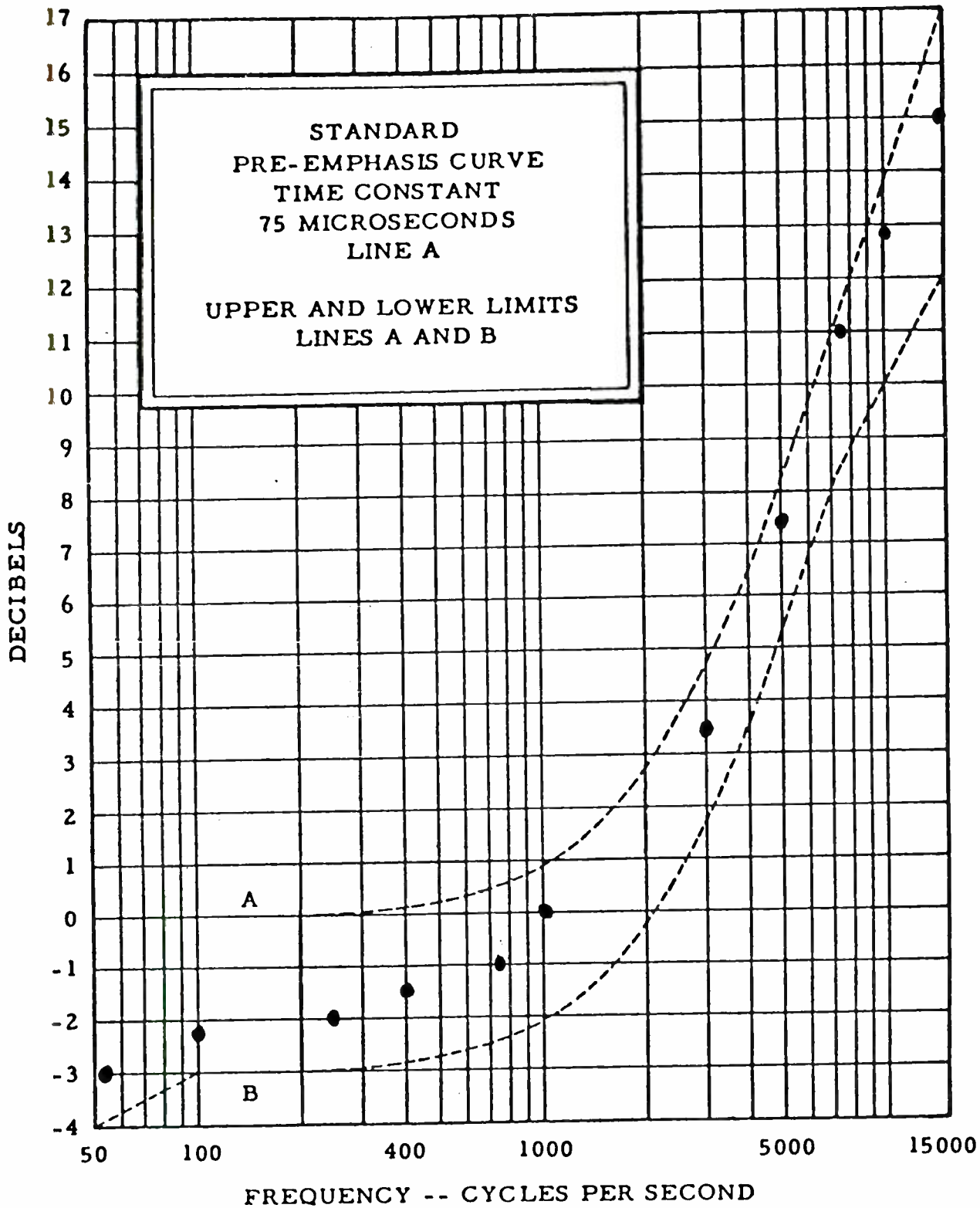
LEFT CHANNEL



AUDIO FREQUENCY RESPONSE--100% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

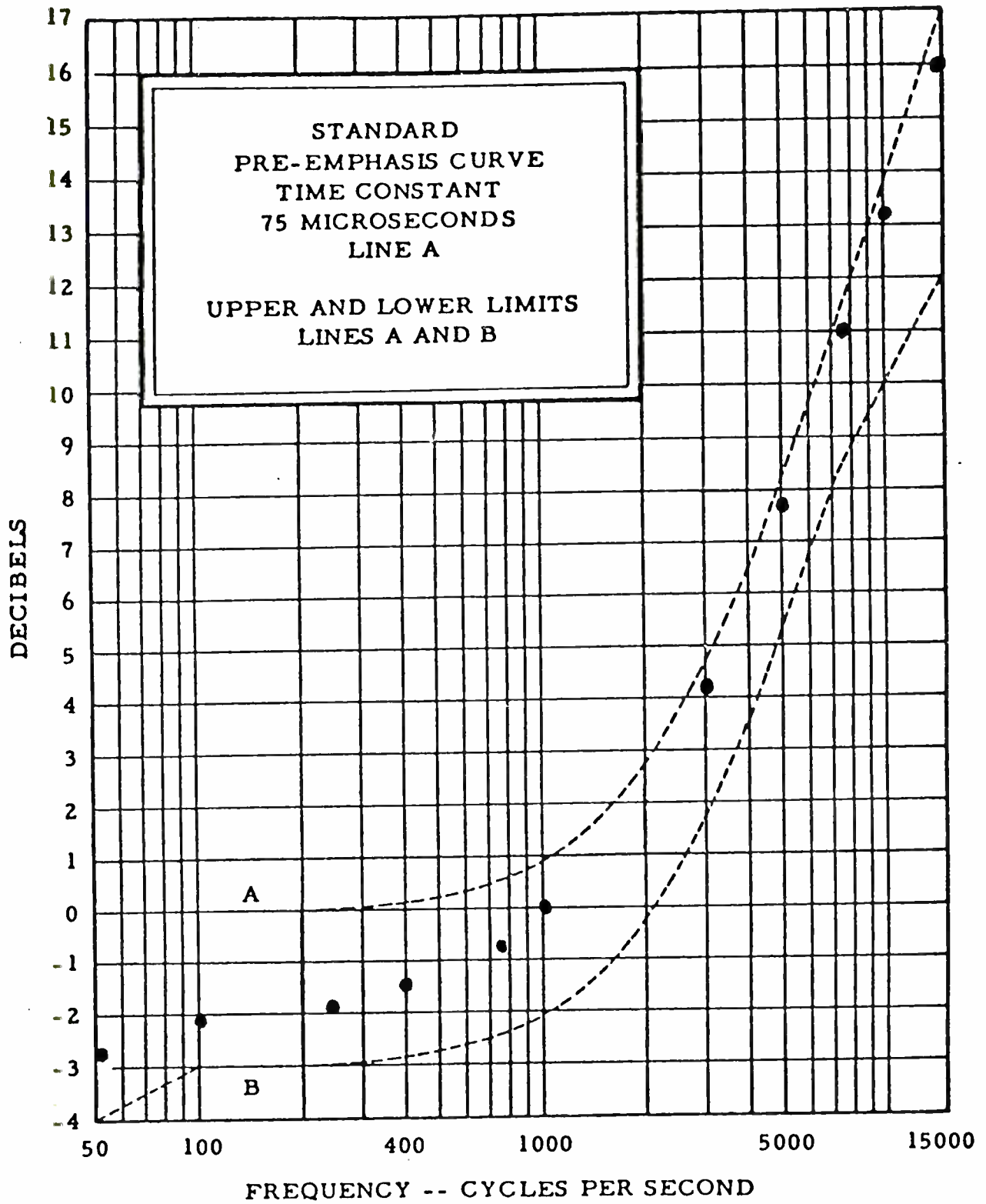
LEFT CHANNEL



AUDIO FREQUENCY RESPONSE--- 25% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

RIGHT CHANNEL

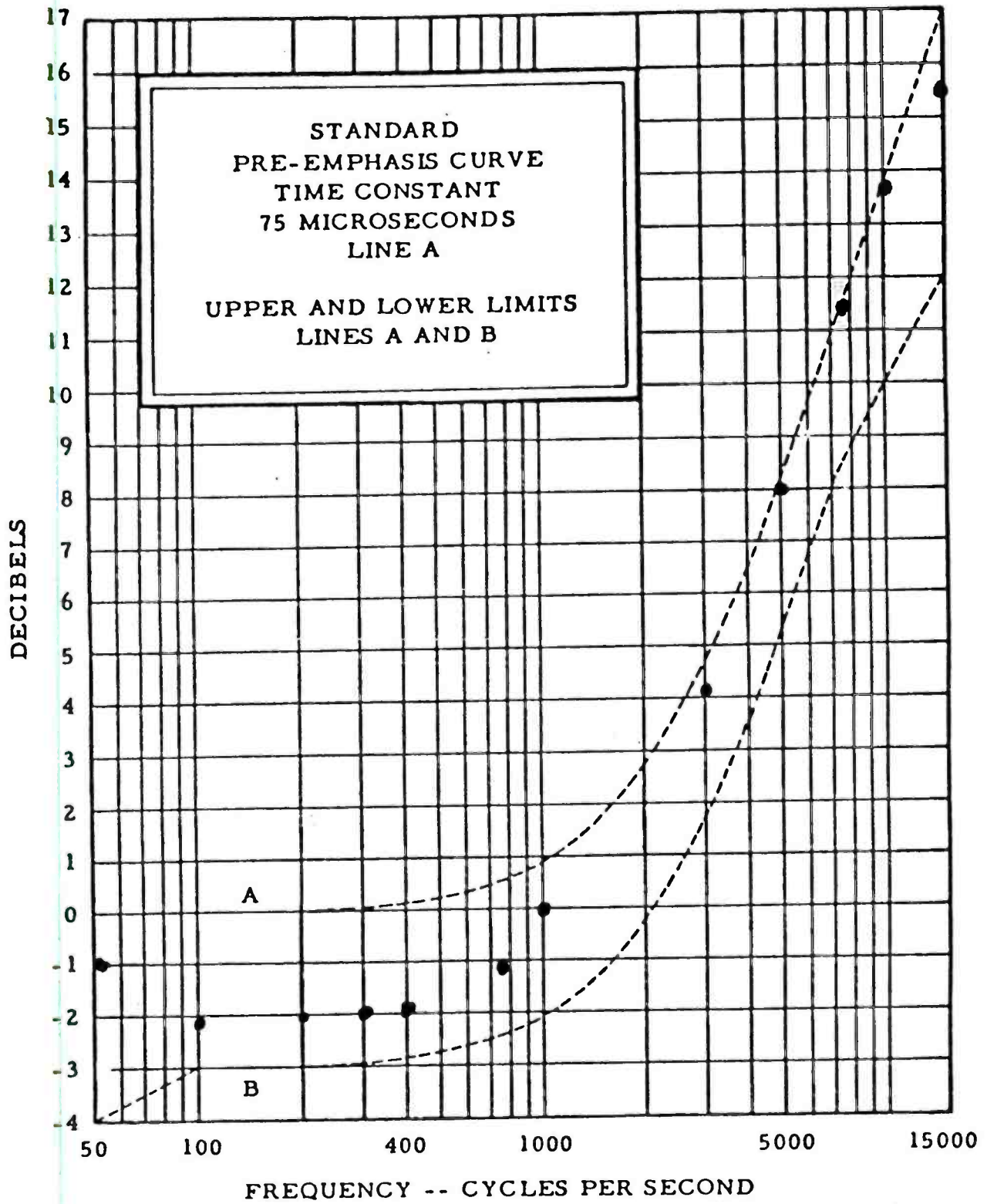


AUDIO FREQUENCY RESPONSE--- 50% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

RIGHT CHANNEL





AUDIO FREQUENCY RESPONSE---100% MODULATION

RADIO STATION KFMK  
HOUSTON TEXAS  
OCTOBER 1978

RIGHT CHANNEL

MONO CHANNEL KFMK RADIO

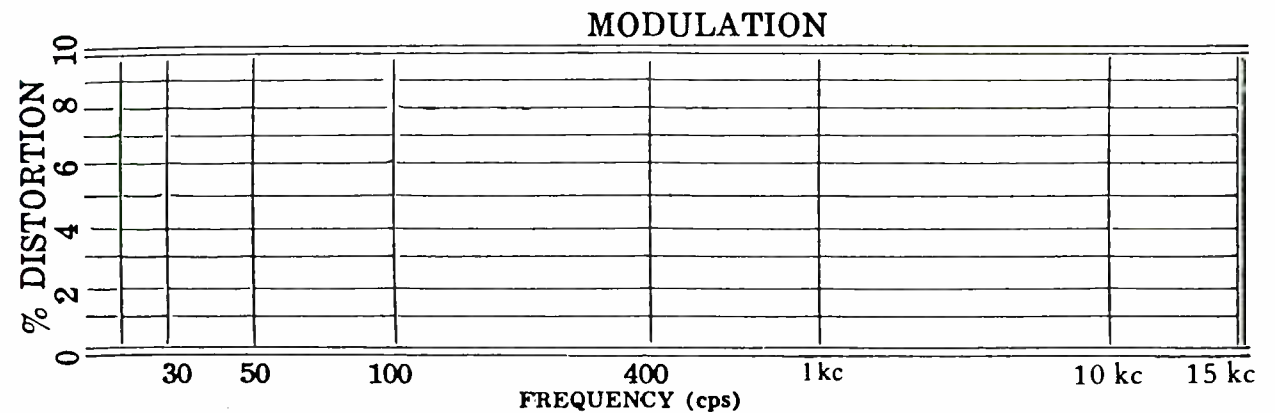
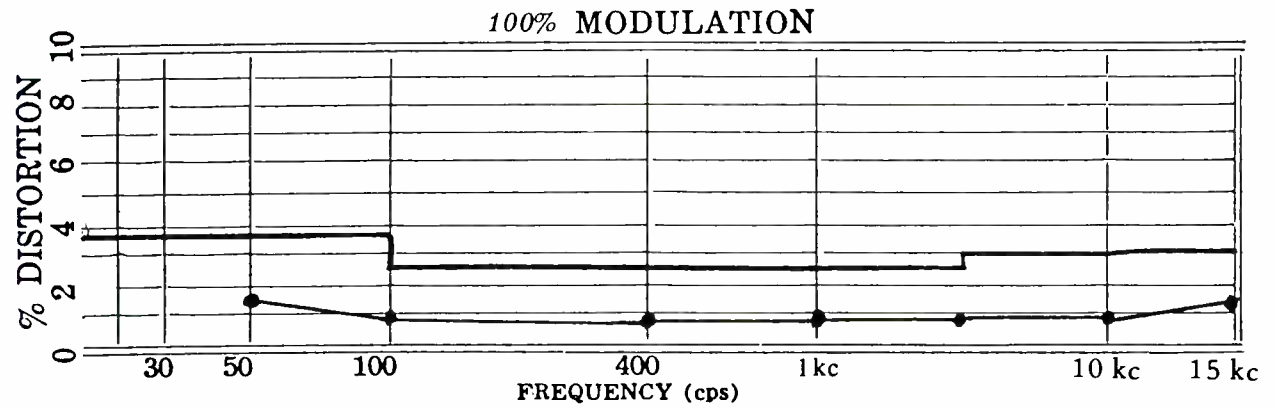
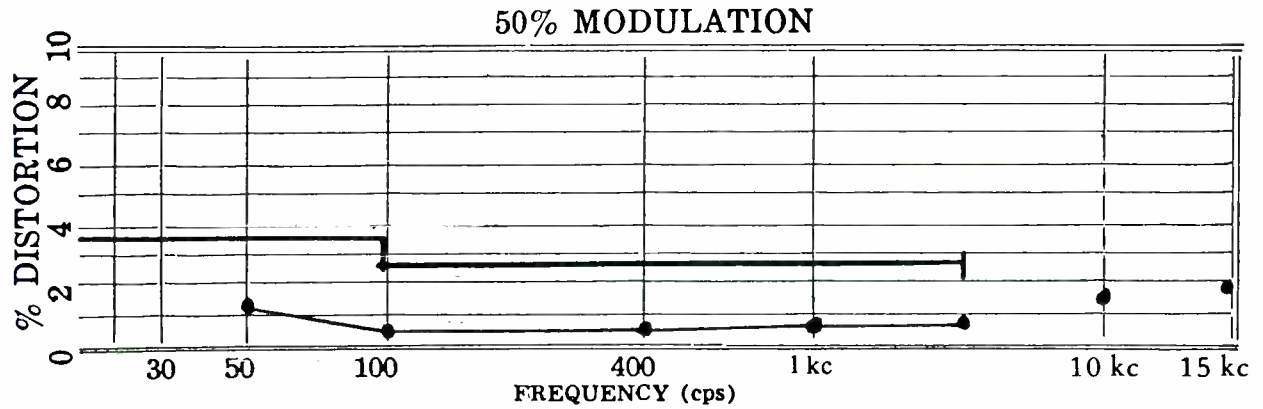
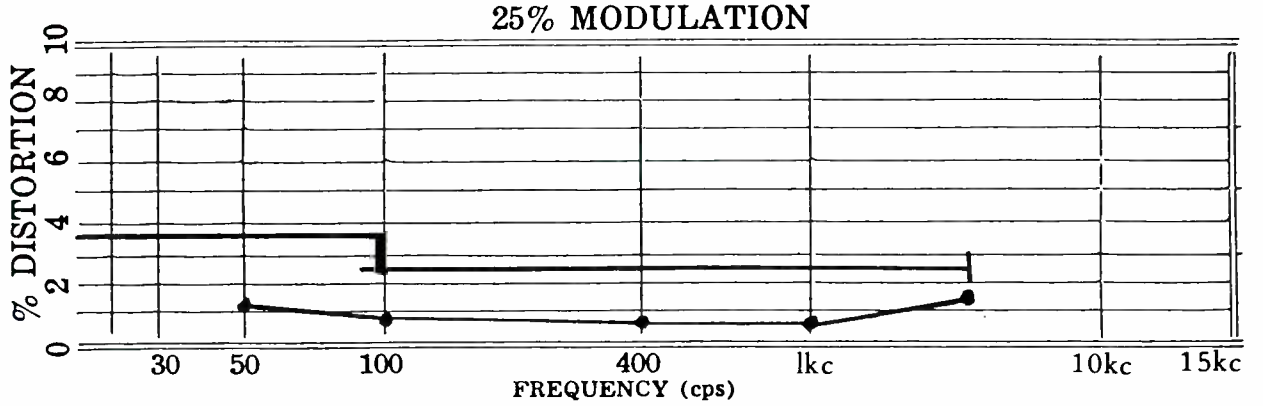
HARMONIC FREQUENCY CONTENT

	50 CPS	100 CPS	400 CPS	1000 CPS	5000 CPS	10 kc	15 kc
25% Modulation	1.24	0.80	0.72	0.62	1.48	**	**
50% Modulation	1.30	0.50	0.55	0.65	0.78	1.50	1.80
100% Modulation	1.50	0.95	0.76	0.88	0.80	0.85	1.20
Modulation							

Date OCTOBER 1978

License No. PL-9-11388

Engineer RONALD D. HANEY



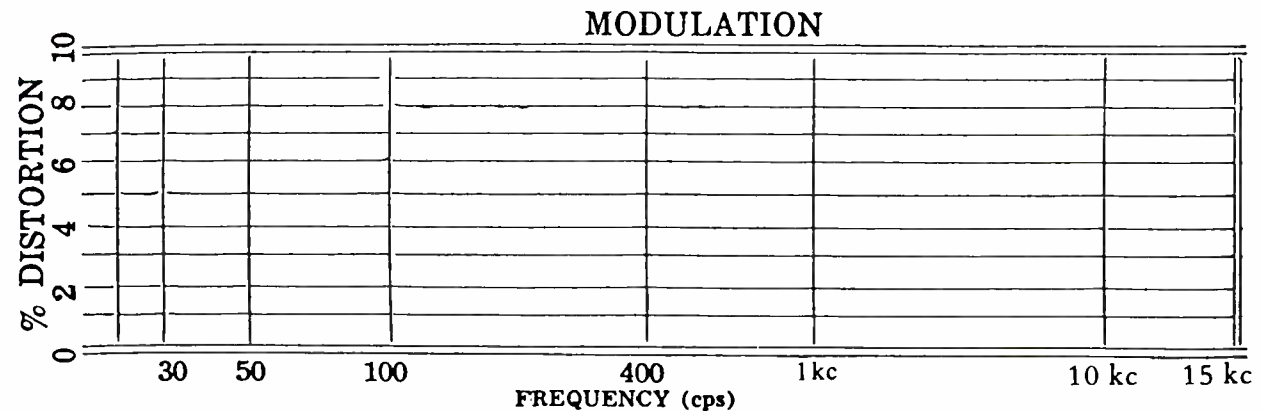
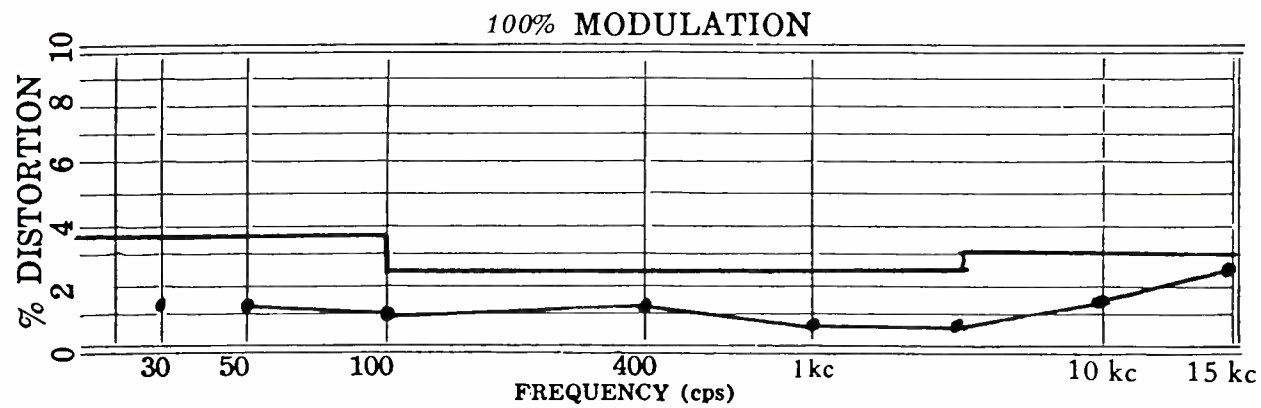
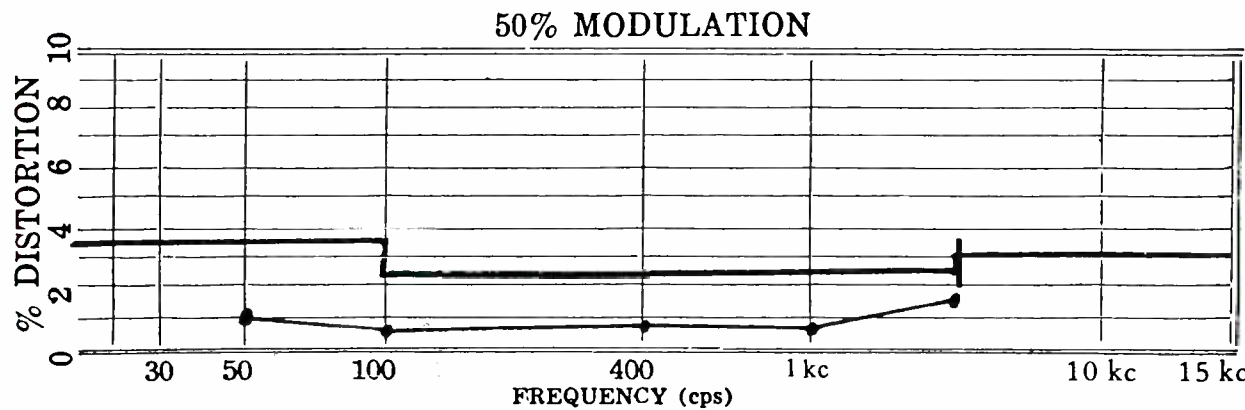
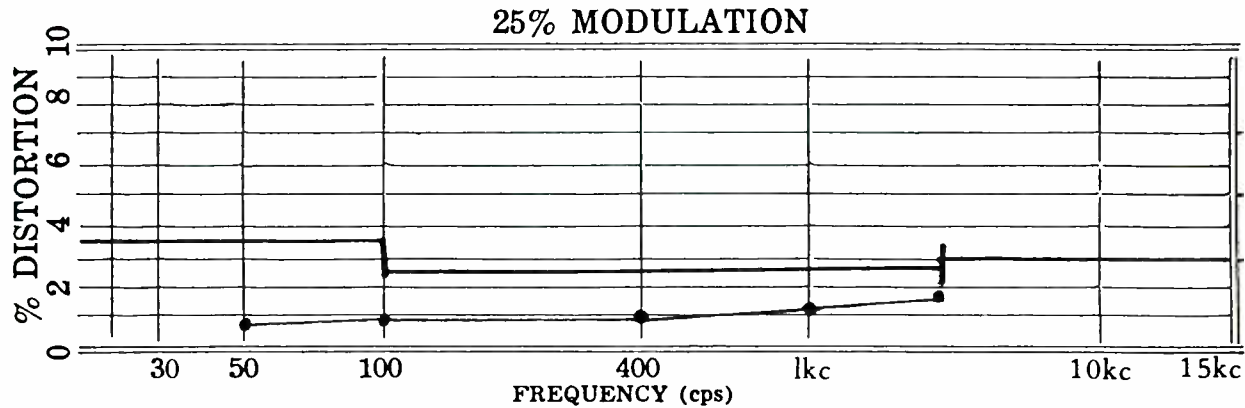
### HARMONIC FREQUENCY CONTENT

	50 CPS	100 CPS	400 CPS	1000 CPS	5000 CPS	10 kc	15 kc
25% Modulation	0.86	0.90	1.00	1.20	1.70	**	**
50% Modulation	1.00	0.58	0.72	0.65	1.60	**	**
100% Modulation	1.30	1.00	1.20	0.78	0.76	1.50	2.50
Modulation							

Date OCTOBER 1978

License No. PL-9-11388

Engineer RONALD D. HANEY





RIGHT CHANNEL

HARMONIC FREQUENCY CONTENT

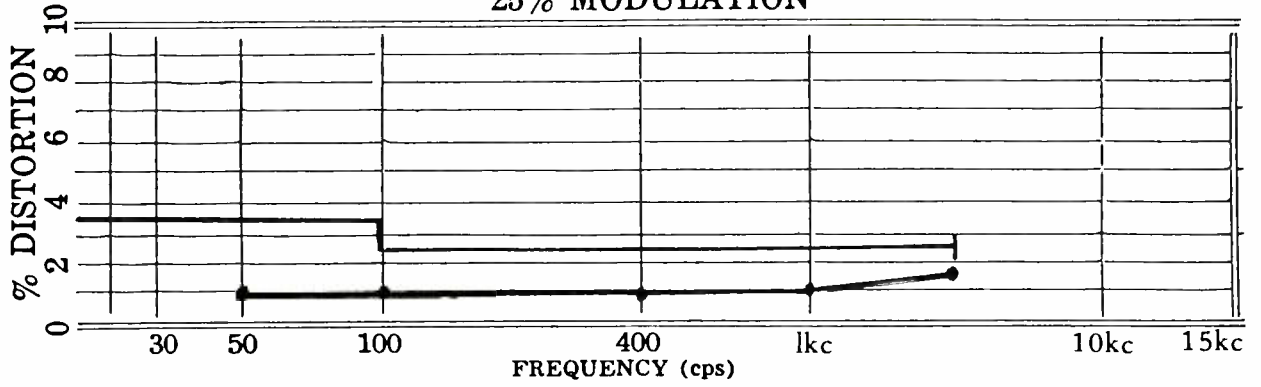
	50 CPS	100 CPS	400 CPS	1000 CPS	5000 CPS	10 kc	15 kc
25% Modulation	1.00	1.00	1.00	1.20	1.70	***	**
50% Modulation	0.77	0.45	0.60	0.52	1.00	**	**
100% Modulation	0.68	0.36	0.40	0.32	0.73	0.46	0.66

OCTOBER 1978  
Date

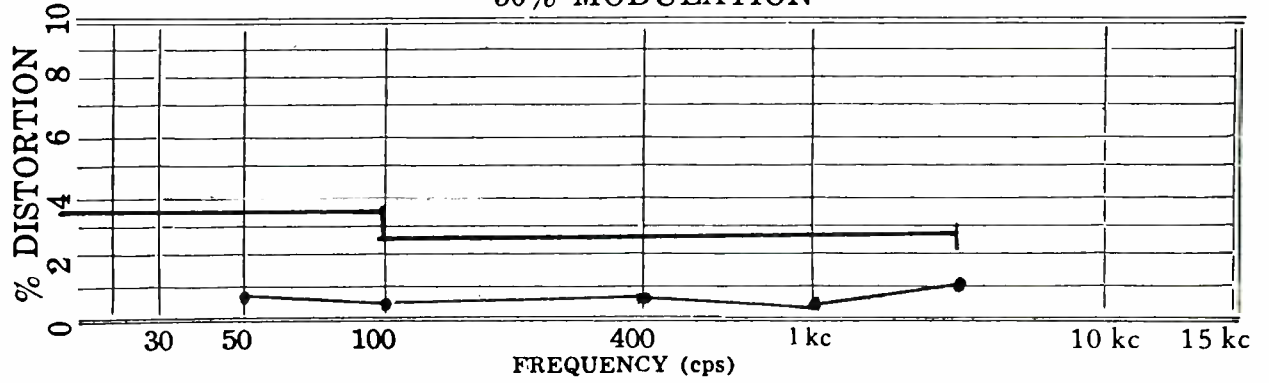
PL-9-11388  
License No.

RONALD D. HANEY  
Engineer

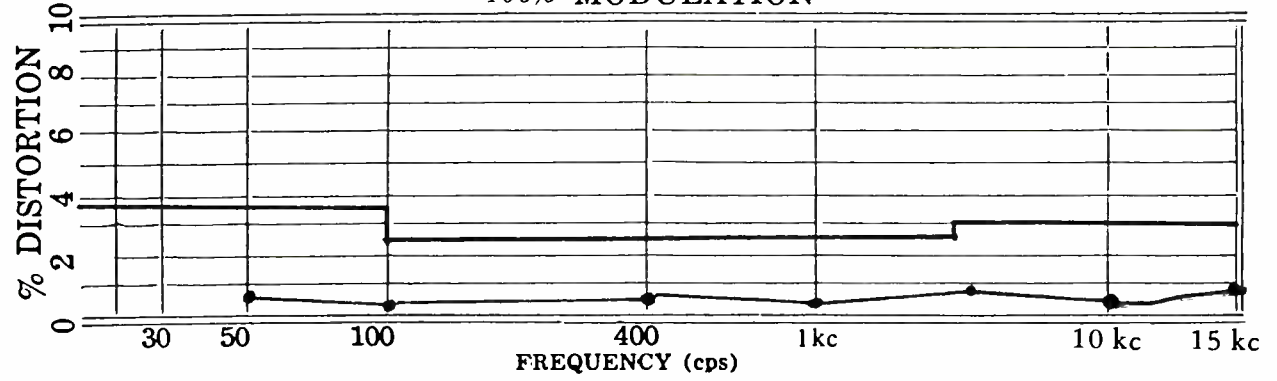
25% MODULATION



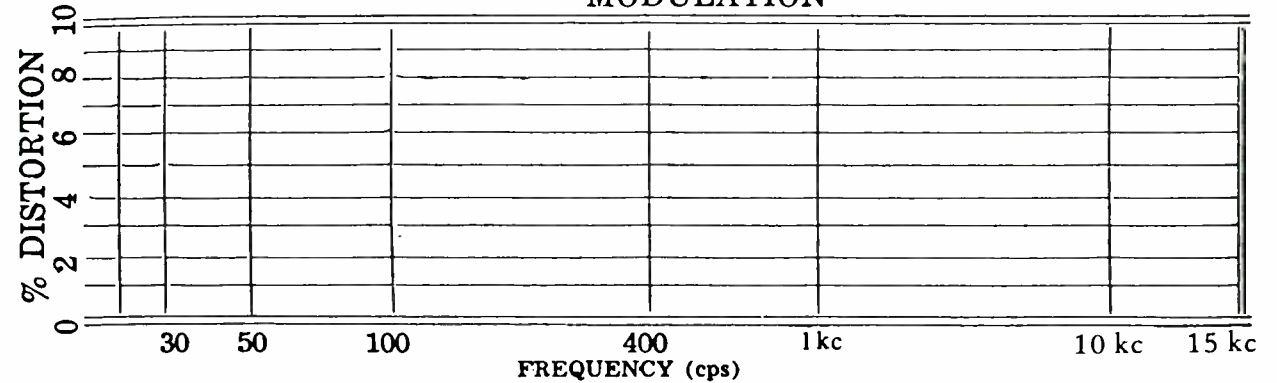
50% MODULATION



100% MODULATION



MODULATION



RADIO STATION KFMK  
PROOF OF PERFORMANCE  
OCTOBER 1978

CHANNEL SEPARATION IN DECIBELS

<u>FREQUENCY IN HERTZ</u>	<u>LEFT INTO RIGHT</u>	<u>RIGHT INTO LEFT</u>
50	<u>38.5</u>	<u>32.0</u>
100	<u>40.4</u>	<u>34.2</u>
400	<u>42.2</u>	<u>35.0</u>
1000	<u>42.0</u>	<u>35.0</u>
5000	<u>40.5</u>	<u>34.8</u>
10000	<u>39.0</u>	<u>36.8</u>
15000	<u>36.0</u>	<u>36.5</u>

ALL MEASUREMENTS TAKEN BY

Ronald D. Flanagan