



RADIO STATION KKYR
EQUIPMENT PERFORMANCE MEASUREMENTS
August 30, 1981

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Consulting Engineer

TABLE OF CONTENTS

- I. STATEMENT ABOUT PROCEDURES
- II. RESPONSE AND DISTORTION MEASUREMENTS
- III. NOISE, CARRIER SHIFT, AND SPURIOUS EMISSIONS
- IV. EQUIPMENT CONNECTION DIAGRAM
- V. TEST EQUIPMENT LIST
- VI. RESPONSE GRAPHS
- VII. DISTORTION GRAPHS

KKYR **1410 AM** ★

August 30, 1981

The following equipment performance measurements for Radio Station KKYR were conducted on the night of August 30, 1981 between the hours of 12 midnight and 5 AM. All measurements were made by or directly under the supervision of Ronald D. Haney (license # P1-9-11388) consulting engineer for KKYR. The test equipment specified in the attached equipment list was used for all 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 0.01 dB between 30 hertz and 30,000 hertz. The residual hum, noise and distortion contained in the audio generator and the harmonic distortion analyzer combined was measured at less than 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 Marti Electronics CLA-40 was disabled by a switch provided by the manufacturer for this purpose. Measurements were made at 98%, 85%, 50% and 25% modulation levels.

The frequency response was measured by adjusting the audio generator to produce the modulation level indicated with the modulating frequency 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 level indicated with the modulation frequencies indicated and measuring the distortion at the Belar AMM-3 modulation monitor test output jack provided for proof of performance measurements.

The signal to noise ratio given is referenced to 400 hertz at 100% modulation. Noise was read directly on the Belar AMM-3 using the noise position provided for FCC noise measurements. Carrier shift was also read directly from the Belar Monitor using the carrier level meter provided for these measurements.

Transmitter harmonic measurements were made on the 2nd and 3rd harmonics using a Potomac Instruments FIM-41 Serial #238 at a distance of .8 mile from the array. Measurements were made in the direction of the main lobe.

ALL DATA CONTAINED HEREIN IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEGE.

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RESPONSE AND DISTORTION MEASUREMENTS

RADIO STATION KKYR

MARSHALL, TEXAS

August 30, 1981

FREQUENCY RESPONSE MEASUREMENTS

Frequency (hertz)	98% Modulation	85% Modulation	50% Modulation	25% Modulation
50	+0.3	+0.2	+0.4	+0.3
100	+0.3	+0.2	+0.4	+0.2
250	+0.1	+0.1	+0.1	+0.1
400	-0.1	-0.1	-0.1	-0.1
1,000	0.0	0.0	0.0	0.0
2,500	+0.2	+0.1	+0.1	+0.1
5,000	+0.3	+0.3	+0.2	+0.1
7,500	+0.3	+0.1	+0.1	+0.2
10,000	-0.5	-0.5	-0.6	-1.1

HARMONIC DISTORTION MEASUREMENTS

Frequency (hertz)	98% Modulation	85% Modulation	50% Modulation	25% Modulation
50	2.50%	1.95%	1.55%	1.40%
100	0.97%	0.88%	0.88%	1.20%
250	0.60%	0.65%	0.72%	1.20%
400	0.60%	0.60%	0.70%	1.20%
1,000	0.72%	0.60%	0.68%	1.10%
2,500	1.05%	0.80%	0.60%	0.94%
5,000	1.20%	1.20%	0.85%	0.95%
7,500	0.60%	0.76%	1.20%	1.35%
10,000	0.84	0.62	1.25%	1.35%

All measurements by:

Ronald D. Haney
 Ronald D. Haney

NOISE, CARRIER SHIFT AND SPURRIOUS
EMISSIONS

RADIO STATION KKYR
MARSHALL, TEXAS
August 30, 1981

SYSTEM NOISE

System noise measured -54 DB below 400 hertz at 100% modulation.

CARRIER SHIFT

98% Modulation	85% Modulation	50% Modulation	25% Modulation
2.0%	2.0%	0.7%	0.2%

SPURRIOUS MEASUREMENTS

2ND Harmonic (2820 khz) no audible sound -- no meter indication
3RD Harmonic (4230 khz) no audible sound -- no meter indication

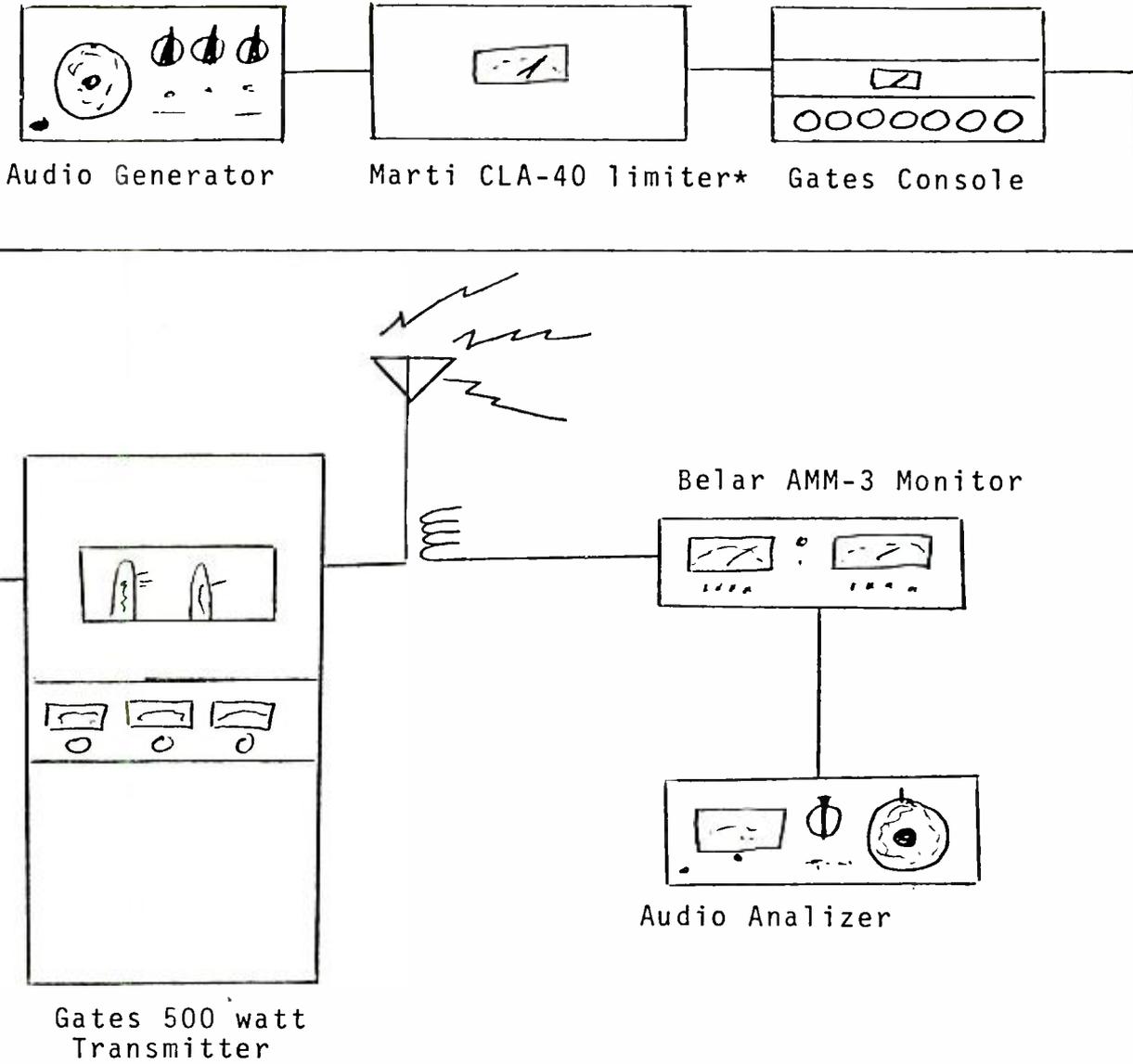
All measurements by:

Ronald D. Haney
Ronald D. Haney

EQUIPMENT CONNECTION DIAGRAM

RADIO STATION KKYR
Marshall, Texas
August 30, 1981

EQUIPMENT CONNECTION DIAGRAM



TEST EQUIPMENT LIST

RADIO STATION KKYR
MARSHALL, TEXAS
August 30, 1981

TEST EQUIPMENT LIST

Potomac Instruments Audio Generator Model AG-51 s/n 407

Potomac Instruments Audio Analyzer Model AA-51 s/n 397

Belar Electronics Modulation Monitor Model AMM-3

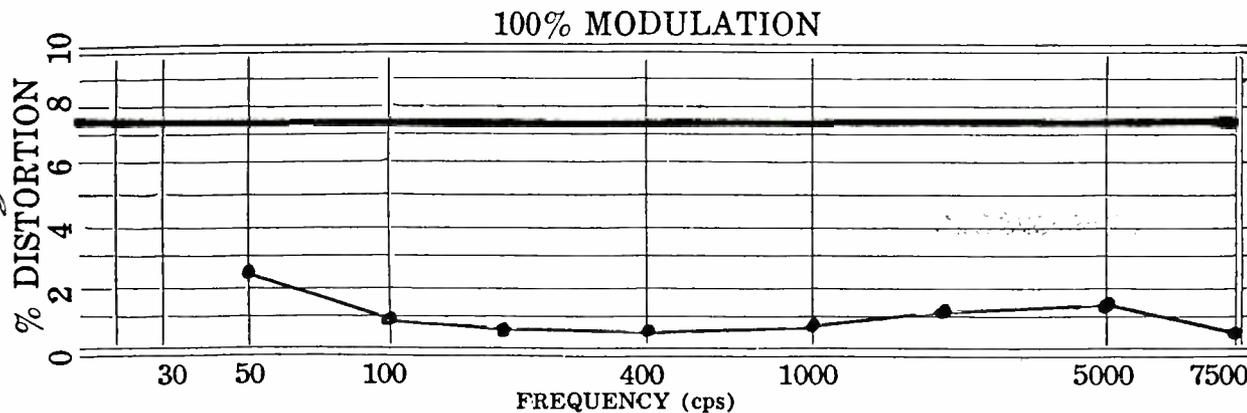
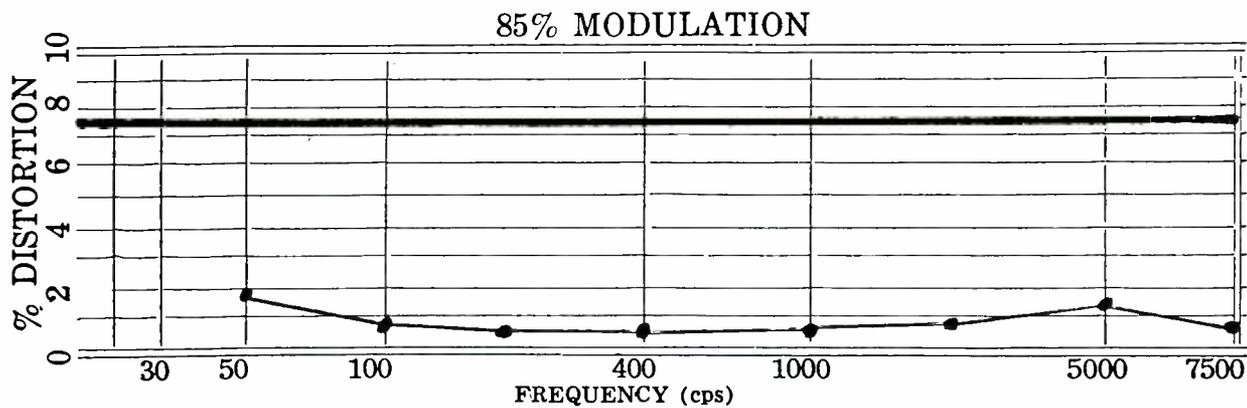
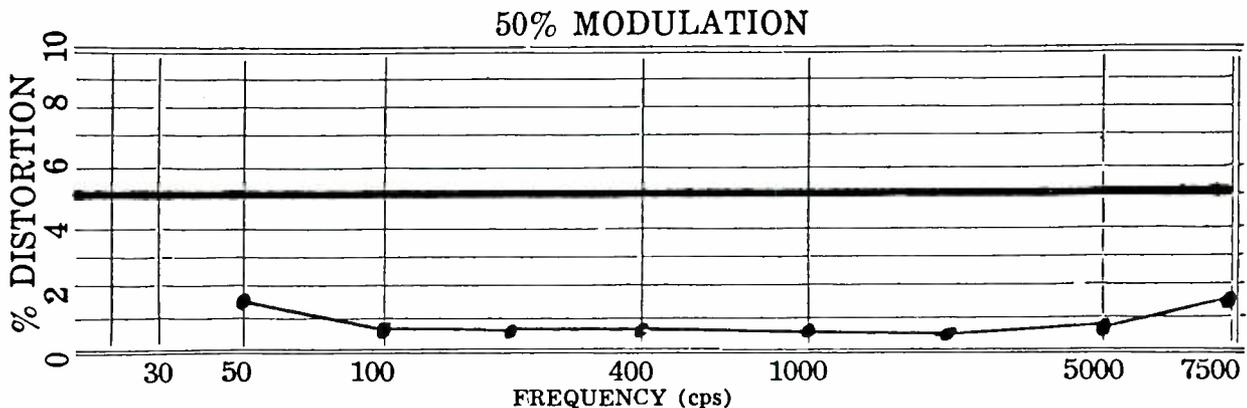
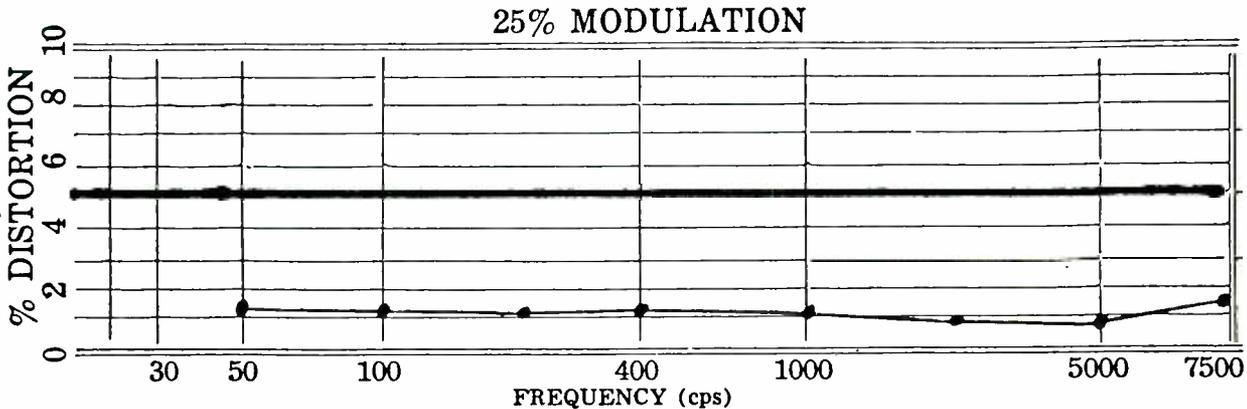
B & K Oscilloscope Model 1407

DISTORTION GRAPHS

HARMONIC FREQUENCY CONTENT

	30 CPS	50 CPS	100 CPS	400 CPS	1000 CPS	5000 CPS	7500 CPS
25% Modulation	n/a	1.40	1.20	1.20	1.20	0.95	1.35
50% Modulation	m/a	1.55	0.88	0.72	0.70	0.85	0.85
85% Modulation	n/a	1.95	0.88	0.65	0.60	1.20	0.76
100% Modulation	n/a	2.50	0.97	0.60	0.72	1.20	0.60

FCC Limits
shown in red.



Engineer Ronald D. Haney
License No. P1-9-11388
Date August 30, 1981

RESPONSE GRAPHS