A. The dc voltage and dc currents at final amplifier:

Collector voltage: 13.5 Vdc
Collector current: 8.9 A

B. MODULATION CHARACTERISTICS

1. A curve showing frequency response of the transmitter is shown in Figure 1. Reference level was audio signal output from a Boonton 8220 modulation meter with one kHz deviation. Audio output was measured with a Audio Precision System One TRMS voltmeter and tracking generator.

2. Modulation limiting curves are shown in Figure 2 using a Boonton 8220 modulation meter. Signal level was established with a Audio Precision System One TRMS voltmeter. The curves show compliance with paragraphs 2.987(b), and 90.211(c).

3. Figure 3 is a graph of the post-limiter low pass filter which meets the requirements of paragraph 90.211(d)(1) in providing a roll-off of 60Logf/3 dB where f is audio frequency in kHz. Measurements were made following EIA RS-152B with an Audio Precision System One selective voltmeter on the Boonton 8220 modulation meter audio output.

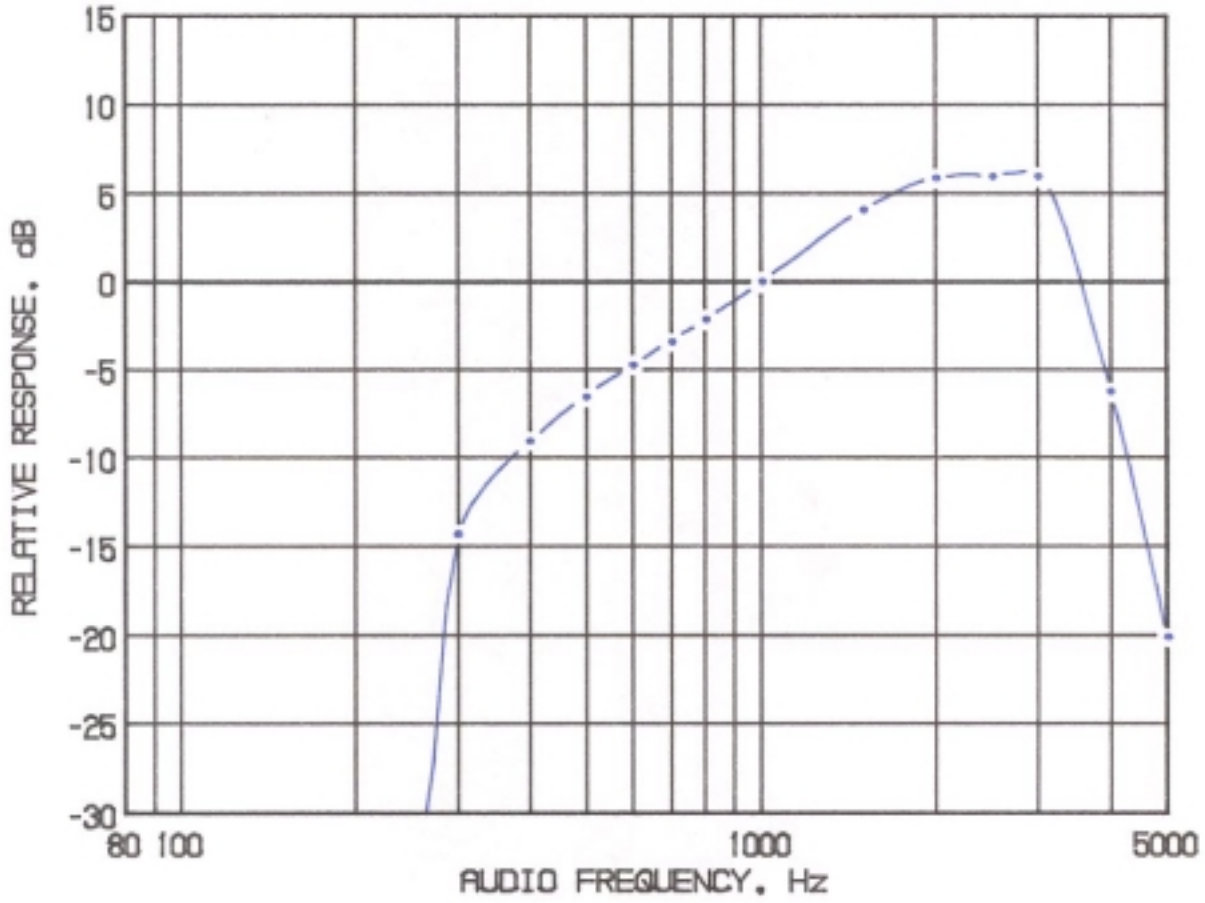
4. Occupied_Bandwidth
(Paragraphs 2.989(c), 90.209(b)(4) and 90.210(d) of the Rules)

Figures 4a and 4b are plots of the sideband envelope of the transmitter taken with a TEK 494P spectrum analyzer. Modulation corresponded to conditions of 2.989(c)(1) and consisted of 2500 Hz tone at an input level 16 dB greater than that necessary to produce 50% modulation at 2272 Hz, the frequency of maximum response. Measured modulation under these conditions was 4.3 kHz.

All plots have unmodulated carrier as 0 dBm reference.

FIGURE 1

MODULATION FREQUENCY RESPONSE

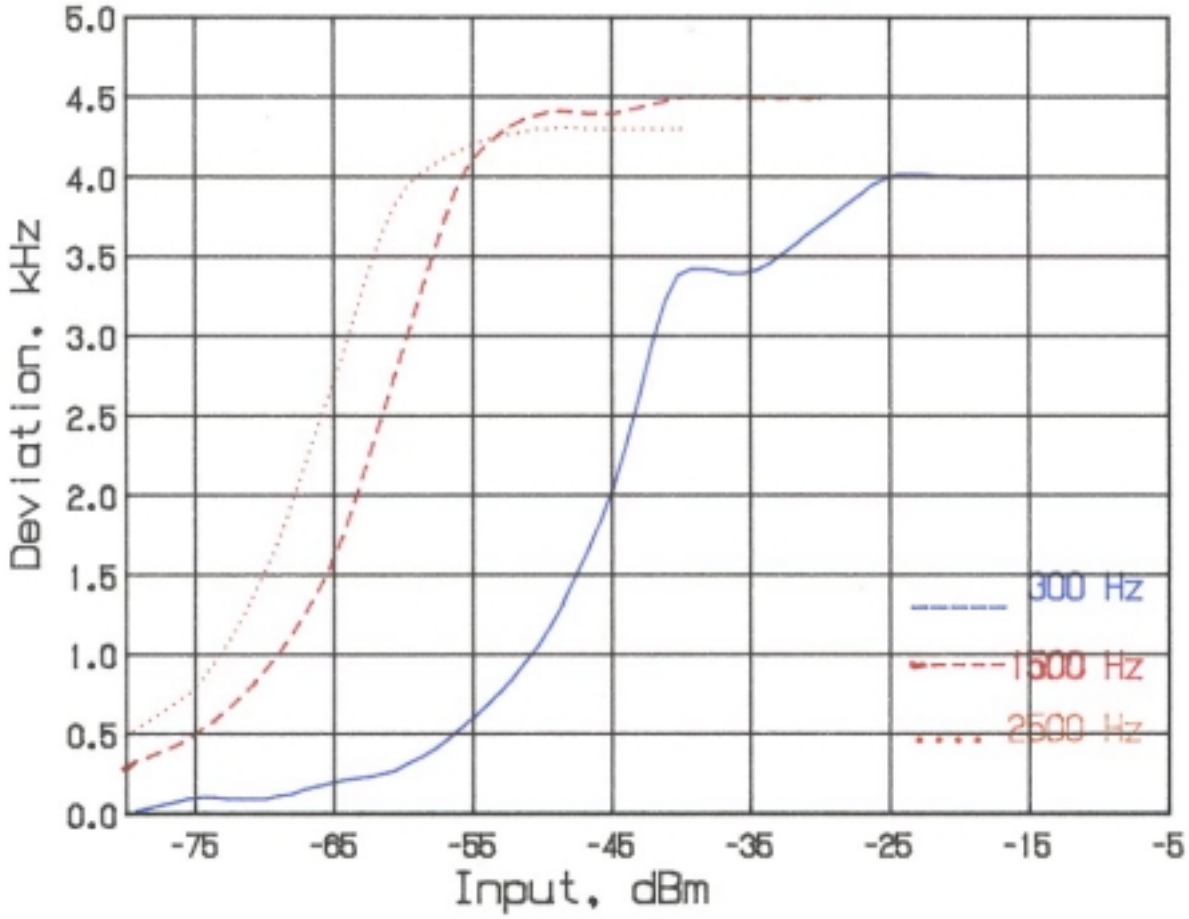


MODULATION FREQUENCY RESPONSE
FCC ID: O6E710150B

FIGURE 1

FIGURE 2

AUDIO LIMITER CHARACTERISTICS

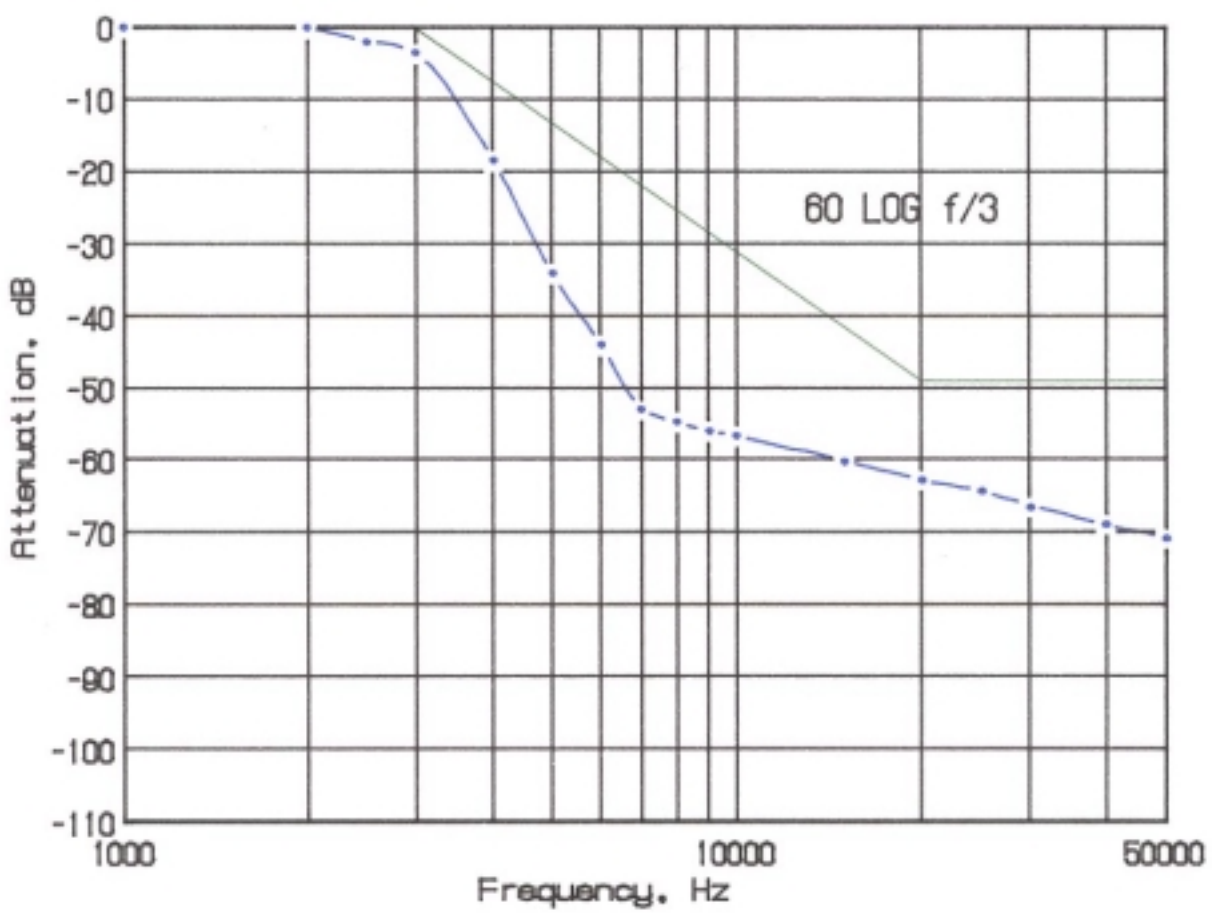


AUDIO LIMITER CHARACTERISTICS
FCC ID: O6E710150B

FIGURE 2

FIGURE 3

AUDIO LOW PASS FILTER RESPONSE

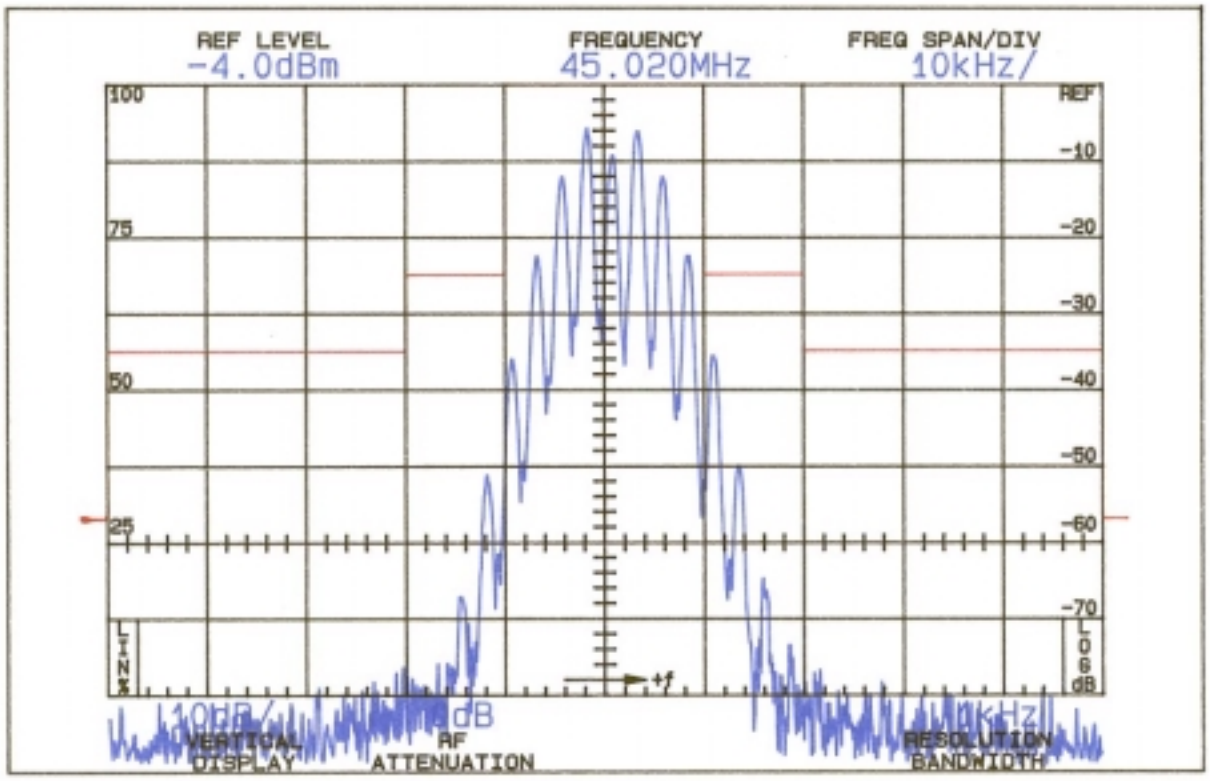


AUDIO LOW PASS FILTER RESPONSE
FCC ID: O6E710150B

FIGURE 3

FIGURE 4a

OCCUPIED BANDWIDTH



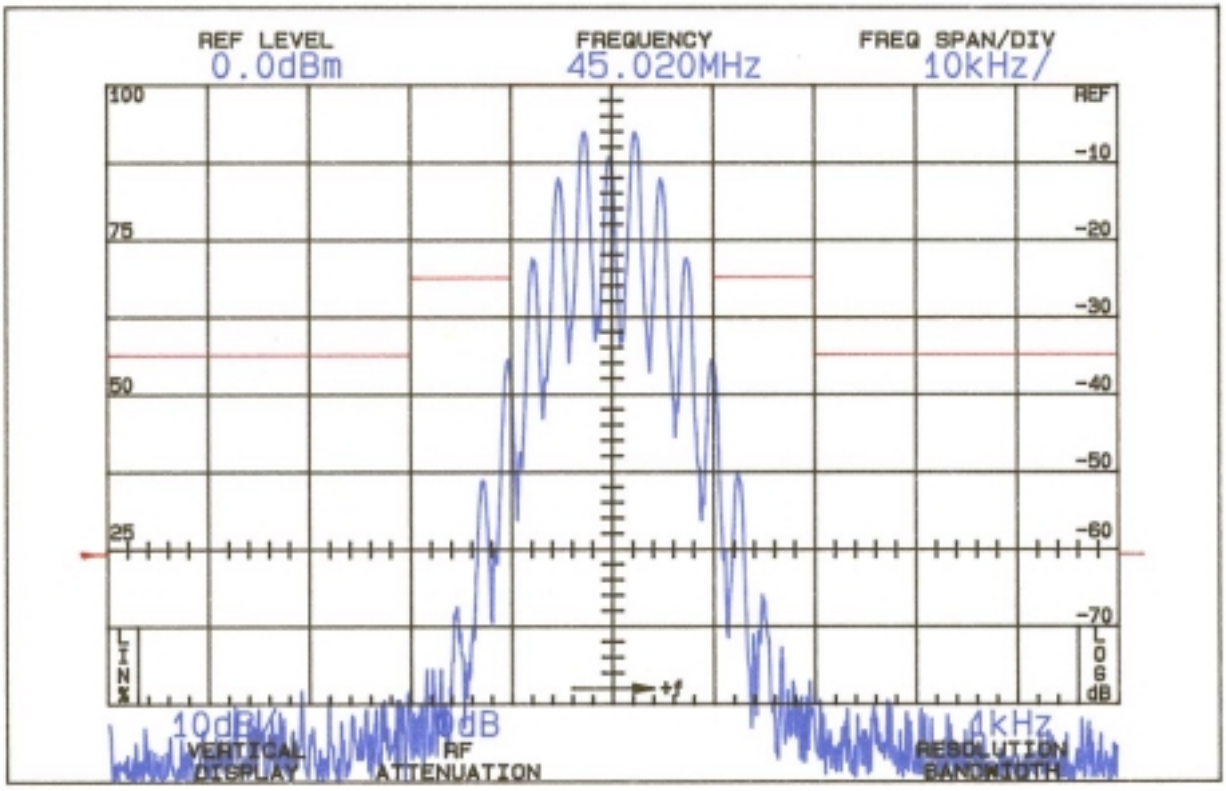
	ATTENUATION IN dB BELOW MEAN OUTPUT POWER Required
On any frequency more than 50% up to and including 100% of the authorized bandwidth, 20 kHz (10-20 kHz)	25
On any frequency more than 100%, up to and including 250% of the authorized bandwidth (20-50 kHz)	35
On any frequency removed from the assigned frequency by more than 250% of the authorized bandwidth (over 50 kHz)	43+10LogP = 61 (P = 60 W)

OCCUPIED BANDWIDTH
FCC ID: O6E710150B

FIGURE 4a (60 W)

FIGURE 4b

OCCUPIED BANDWIDTH



	ATTENUATION IN dB BELOW MEAN OUTPUT POWER Required
On any frequency more than 50% up to and including 100% of the authorized bandwidth, 20 kHz (10-20 kHz)	25
On any frequency more than 100% up to and including 250% of the authorized bandwidth (20-50 kHz)	35
On any frequency removed from the assigned frequency by more than 250% of the authorized bandwidth (over 50 kHz)	43+10LogP = 71 (P = 25 W)

OCCUPIED BANDWIDTH
FCC ID: O6E710150B

FIGURE 4b (25 W)

B. MODULATION CHARACTERISTICS (Continued)

The plots are within the limits imposed by Paragraph 90.211(c) for frequency modulation. The horizontal scale (frequency) is 10 kHz per division and the vertical scale (amplitude) is a logarithmic presentation equal to 10 dB per division.

C. FREQUENCY STABILITY
(Paragraph 2.995(a)(2) and 90.213 of the Rules)

Measurement of frequency stability versus temperature was made at temperatures from -30°C to +50°C. At each temperature, the unit was exposed to test chamber ambient a minimum of 60 minutes after indicated chamber temperature ambient had stabilized to within ±2° of the desired test temperature. Following the 1 hour soak at each temperature, the unit was turned on, keyed and frequency measured within 2 minutes. Test temperature was sequenced in the order shown in Table 3, starting with -30°C.

Temperature was monitored with a Keithley 871 digital thermometer. The transmitter output stage was terminated in a dummy load. Primary supply was 13.8 volts. Frequency was measured with a HP 5385A frequency counter connected to the transmitter through a power attenuator. Measurements were made at 45.02 MHz. No transient keying effects were observed.

TABLE 3

FREQUENCY STABILITY vs. TEMPERATURE

45.02 MHz; 13.8 Vdc; 60 W

Temperature, °C	Output Frequency, MHz	p.p.m.
-29.7	45.020161	3.6
-20.0	45.020269	6.0
- 9.3	45.020182	4.0
- 0.1	45.020106	2.4
10.0	45.020052	1.2
20.2	45.020011	0.2
30.5	45.019977	-0.5
40.5	45.019915	-1.9
50.5	45.019832	-3.7

Maximum frequency error: 45.020269
45.020000

\+ .000269 MHz

The device met a stability of .002% (20 ppm) or a maximum of ±.000900 MHz

High Limit	45.020900 MHz
Low Limit	45.019100 MHz

FCC Rule 90.213(a) specifies .002%.