

A. INTRODUCTION

The following data are submitted in connection with this request for type certification of the TRC-446 transceiver in accordance with Part 2, Subpart J of the FCC Rules.

The TRC-446 is a double sideband amplitude modulated transmitter/receiver combination intended for mobile operation in the citizens radio service. The transmitter has 40-channel capability in the 26.965 - 27.405 MHz band utilizing phase locked loop (PLL) technology. It included weather band channels.

B. GENERAL INFORMATION REQUIRED FOR TYPE CERTIFICATION
(Paragraph 2.983 of the Rules)

1. Name of applicant: Radio Shack, a Div. of Tandy Corp.
2. Identification of equipment: FCC ID: AAO2101574
 - a. The equipment identification label is shown in Appendix 1.
 - b. Photographs of the equipment are included in Appendix 2.
3. Quantity production is planned.
4. Technical description:
 - a. 6k00A3E emission
 - b. Frequency range: 26.965 - 27.405 MHz
 - c. Operating power of transmitter is fixed at the factory at less than 4 watts.
 - d. Maximum power rating under 95.635(c) of the Rules is 4 watts.
 - e. The dc voltage and dc currents at final amplifier:

Collector voltage: 11.4 V
Collector current: 590 mA @ 13.8 Vdc input.
 - f. Function of each active semiconductor device:
See Appendix 3.
 - g. Complete circuit diagram is included as Appendix 4.
 - h. A draft instruction book is submitted as Appendix 5.
 - i. The transmitter tune-up procedure is included in Appendix 6.
 - j. A description of circuits for stabilizing frequency is included in Appendix 7.
 - k. A description of circuits and devices employed for suppression of spurious radiation and for limiting modulation is included in Appendix 8.
 - l. Not applicable.

B. GENERAL INFORMATION...(Continued)

5. Data for 2.985 through 2.997 follow this section.

6. RF Power Output (Paragraph 2.985(a),(b)(1) of the Rules)

RF power output in the AM mode was measured with a Bird 4421 RF power meter and a Narda 765-20 50 ohm dummy load. (The transmitter was tuned by the factory according to the procedure of Exhibit 4.) Power was measured with a supply voltage of 13.8 volts, and indicated:

Channel	Power, W
1	3.7
21	3.7
40	3.7

C. MODULATION CHARACTERISTICS

1. AF Frequency Response

A curve showing frequency response of the transmitter is shown in Figure 1. Reference level was taken as a 1 kHz tone with 50% modulation, as measured on a Data Tech 209 modulation meter, using Audio Precision System One digital voltmeter and tracking generator.

2. Modulation Limiting

Curves of AM modulation limiting for both positive and negative peaks are shown in Figures 2a and 2b, respectively. Characteristics at 300, 810, and 2500 Hz are shown using a Data Tech 209 modulation meter. Signal level was established with a Audio Precision System One digital voltmeter. The curves show compliance with Paragraph 95.633(d) of the Rules.

3. Modulation Limiter Attack Time

Modulation limiter attack time was measured by applying to the microphone input terminals a pulsed tone at 2500 Hz, 16 dB above the level required for 50% modulation at the frequency of maximum response, 810 Hz. The spectrum analyzer was tuned to upper and lower fourth-order sidebands in the time domain. Horizontal sweep of the analyzer was triggered in synchronism with the tone turn-on. Sweep speed was 100 milliseconds per division. Plots are included as Figures 3a and 3b. Any transients observed in excess of 33 dB attenuation as referenced to the carrier were less than 20 ms in duration.