

SECTION I

GENERAL INFORMATION

1-1. GENERAL DESCRIPTION.

1-2. The Model 612A UHF Signal Generator, figure 1-1, covers a frequency range of 450 to 1230 mc. It provides an output from a maximum of 0.5 volt into 50 ohms which can be attenuated precisely to levels as low as 0.1 microvolt. The attenuator is a wave-guide-beyond-cutoff type, which, together with the crystal monitor circuit, provides reliable r-f outputs which can be directly set on the calibrated dial.

1-3. The output frequency is determined by the use of high-frequency pencil triodes in a cavity-tuned circuit which permits wide-range operation and uniform tracking over the entire band. One pencil triode acts as the oscillator in a tuned-cathode, tuned-plate circuit while the other acts as an r-f amplifier in a double tuned amplifier stage with a bandwidth of 15 mc. This arrangement permits high modulation percentages with modulating frequencies up to 5 mc with minimum incidental fm. The frequency is tuned by means of a direct screw operating mechanism together with a direct reading dial. No charts or interpolation is required.

1-4. The Model 612A may be modulated internally or externally for amplitude or pulse modulation. Internal modulation is provided by a built-in, fixed-frequency oscillator for either 400 or 1000 cycles per second. External modulation can be either sine waves or pulses as described in table 1-1. Pulse modulation may be applied to either the amplifier or directly to the oscillator when high on-off signal ratios are required. A d-c restorer circuit permits modulation to occur either up or down from the level set to simulate TV modulation characteristics. The percent modulation meter responds to the peak value, indicating the degree of pulse modulation.

1-5. This generator has found wide acceptance in the uhf field including TV, public service communications, citizen's radio, marine operations, studio transmitter links, and aeronautical-radio-navigation. It will be found useful for measuring gain, sensitivity or image rejection of receivers, and selectivity. UHF television equipment can be tested directly, under actual modulation conditions, with the Model 612A.



Figure 1-1. Model 612A UHF Signal Generator

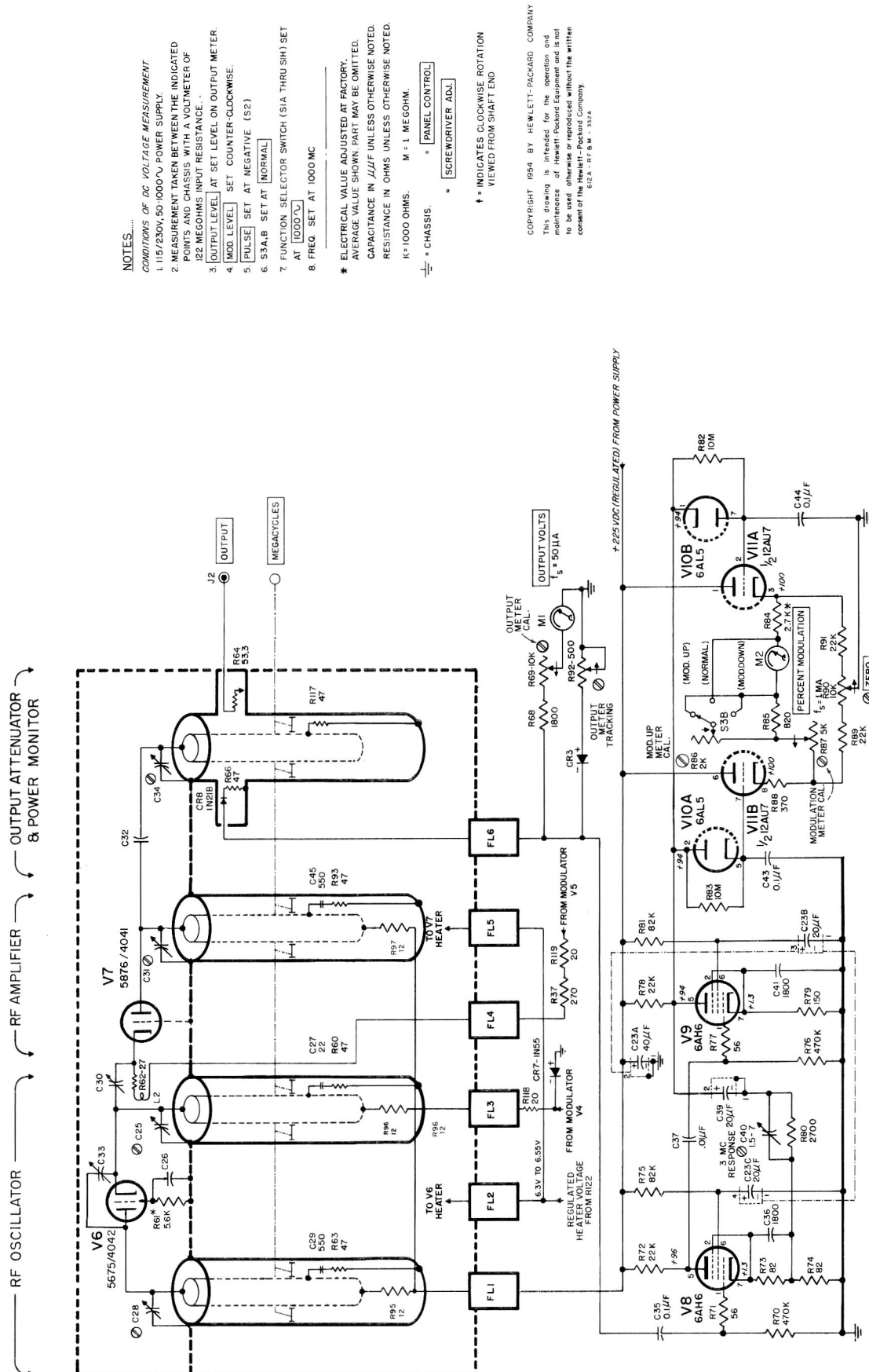


Figure 4-12. RF and Modulation Meter Section

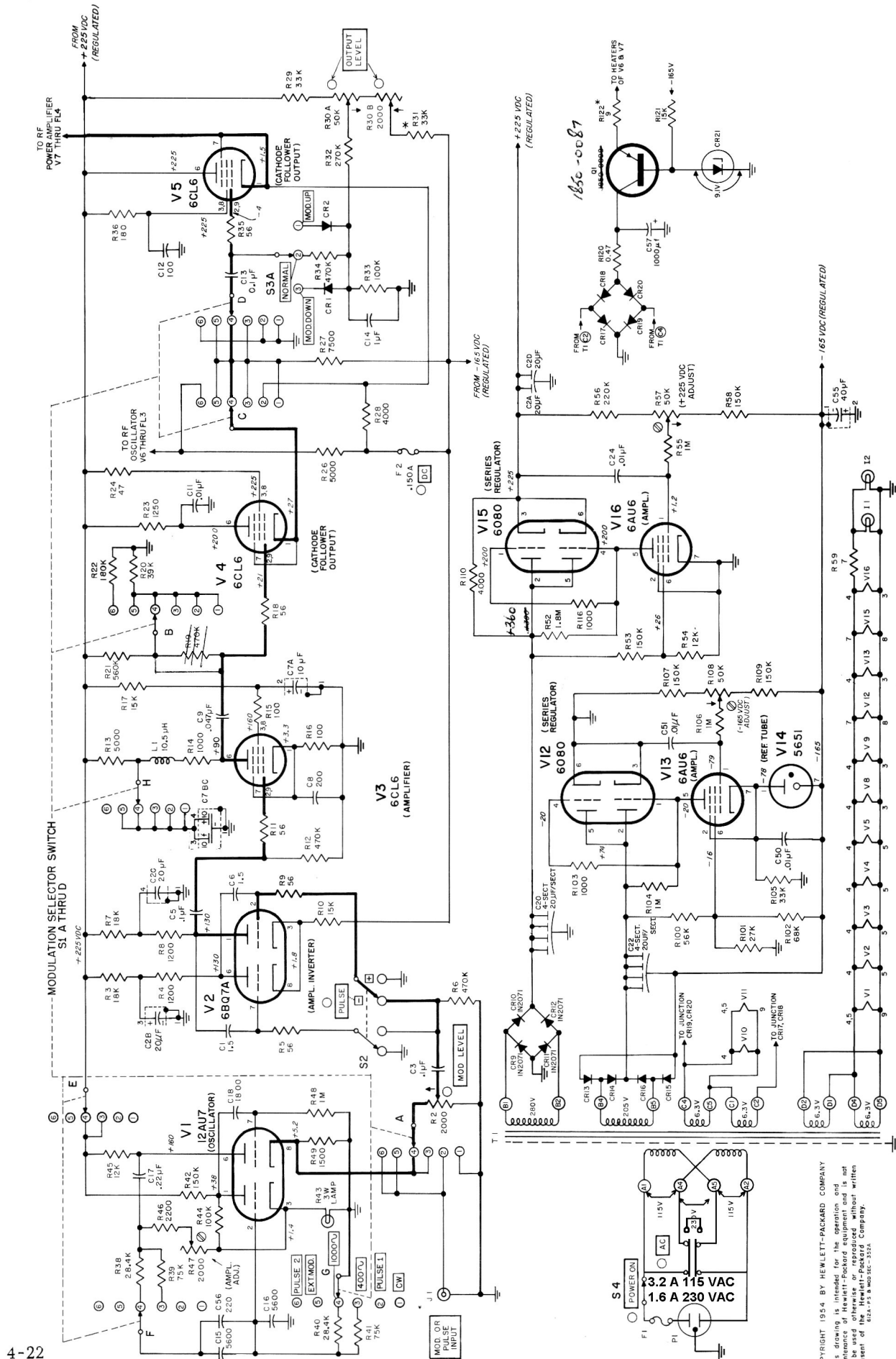


Figure 4-13. Power Supply and Modulator Section