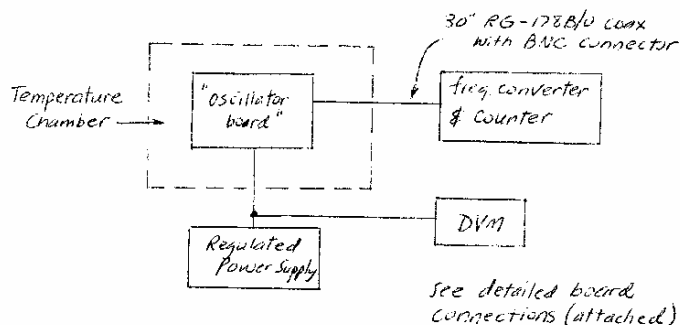


5. Frequency Stability--Part 2.995

Part A--Temperature Stability

Equipment: "oscillator board" assembly 3101189
Temperature Chamber, Tenney Model SST
Regulated Power Supply, Heath Model IP-27
Frequency Counter, Hewlett-Packard Model 5245L
Frequency Converter, 50-500 Mhz, Hewlett-Packard Model 5253B
Type 78L08 integrated-circuit voltage regulator
Digital Voltmeter, Fluke Model 8030A

Set-up:



Comment: The oscillator board assembly 3101189 (schematic 4101163) is used on two Mentor Radio models: M15 and MB. This assembly contains two crystal oscillators--one for the receiver local oscillator and one for the transmitter. Both oscillators are followed by frequency triplers. The transmitter oscillator tripler is in turn followed by a buffer amplifier whose output to the transmitter is about 1.5 vrms. It is this output whose frequency is measured.

Procedure:

- (a) Solder approximately 30 inches of RG-178B/U coax to transmitter r.f. output, and attach a BNC connector. Place oscillator board inside temperature chamber and connect BNC connector to frequency converter/counter located outside chamber. Connect regulated power supply per detail attached and adjust output to 13.8 volts. Note: the 78L08 is inside the temperature chamber.
- (b) For each temperature, allow 10 minutes after the desired