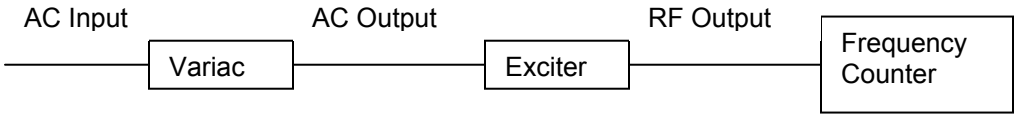
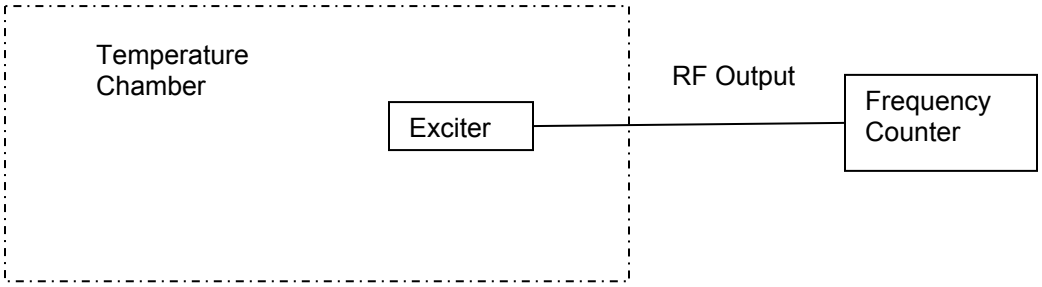
FREQUENCY STABILITY MEASUREMENTS

Frequency stability versus temperature and line voltage was measured in a controlled environment. For these tests the exciter RF output was fed to a frequency counter that has better than a 1ppm accuracy. The test equipment configuration is shown below.

Frequency Stability versus line voltage variation



Frequency Stability versus temperature



The Variac was adjusted for nominal voltage and the frequency was recorded. Then the variac was adjusted to 85% and 115% of the nominal voltage and the frequency was recorded at each voltage level. The results are tabulated below.

LINE VOLTAGE (Volts)	Visual Frequency (MHz)	Aural Frequency (MHz)
93.5 (85%)	753.249989	757.749989
110 (nominal)	753.250016	757.750016
126.5 (115%)	753.249968	757.749968

For the temperature stability measurements the exciter was placed inside a temperature chamber equipped with temperature controller. The exciter frequency was measured on the frequency counter. Measurements were first recorded at room temperature. The temperature in the chamber was changed to each of the points identified in the table below. The chamber followed a prescribed rate of change to reach each temperature and was then allowed to stabilize at the desired temperature at which time frequency measurements were made.

Temperature °C	Visual Frequency (MHz)	Aural Frequency (MHz)
50	753.250088	757.750088
45	753.250065	757.750065
35	753.250050	757.750050
25	753.250038	757.750038
15	753.250012	757.750012
+5	753.250003	757.750003
-5	753.250016	757.750016
-15	753.250041	757.750041
-25	753.250050	757.750050
-30	753.250096	757.750096

The recorded data indicates that the total shift in frequency was 93 Hz and thus frequency stability requirements of FCC Rule 2.1055 were met.