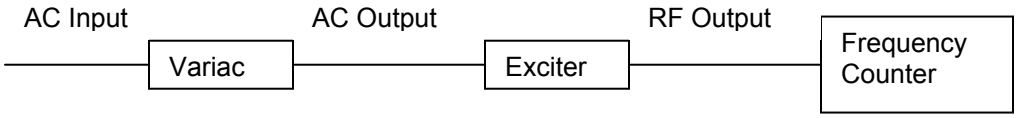
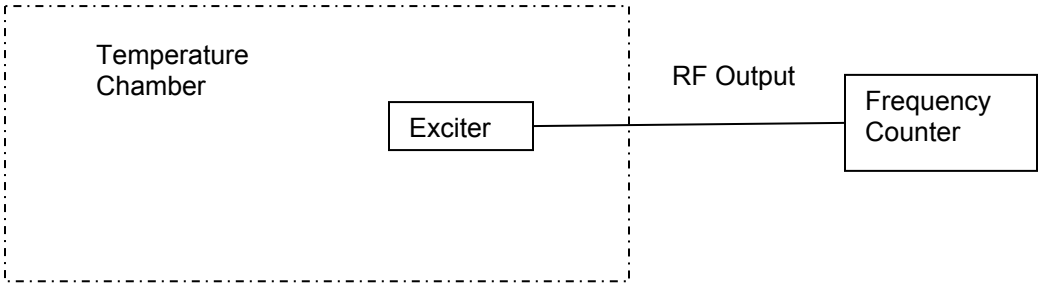
FREQUENCY STABILITY MEASUREMENTS

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%)	597.249983	601.749983
110 (nominal)	597.250046	601.750046
126.5 (115%)	597.249978	601.749978

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	597.249976	601.749976
45	597.250003	601.750003
35	597.250031	601.750031
25	597.250046	601.750046
15	597.250047	601.750047
+5	597.250048	601.750048
-5	597.250051	601.750051
-15	597.250057	601.750057
-25	597.250060	601.750060
-30	597.250066	601.750066

The recorded data indicates that the total shift in frequency was 90 Hz and thus frequency stability requirements of FCC Rule 2.1055 were met.