

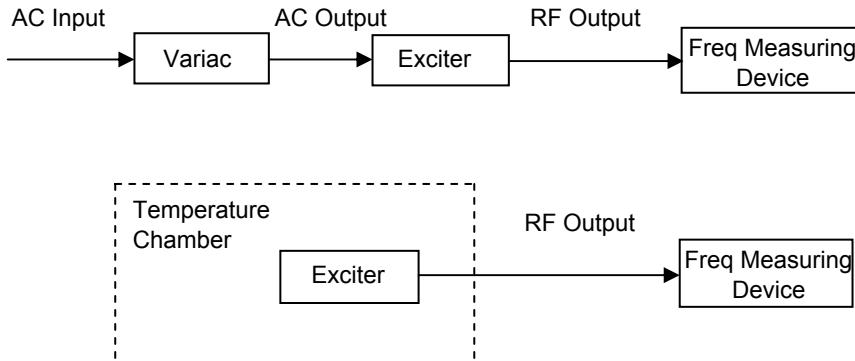
# Frequency Stability Measurements (NTSC)

Tested by: Jim Collier on May 25, 2006

**EQUIPMENT MODEL:** Screen Service SCT 020U EXCITER

Frequency stability versus temperature and line voltage was measured in a controlled environment.

For these tests the exciter RF output was fed to a calibrated frequency measuring device that has better than a 1ppm accuracy. The test equipment configuration is shown below.



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)
104 (85%)	693.250033	697.7500079
122 (Nominal)	693.250035	697.750081
140 (115%)	693.250033	697.750077

For the temperature stability measurements the exciter was placed inside a Tenney temperature chamber equipped with a MicroTenn II temperature controller. The exciter was energized and the frequencies were measured on the frequency counter. The temperature was then raised to +50°C, allowed to stabilize for 15 minutes and then cycled to each colder temperature where it was allowed to stabilize for 10 minutes before recording the measured frequency and moving on to the next lower temperature.

Temperature °C	Time	Visual Frequency (MHz)	Aural Frequency (MHz)
25	11:30	693.250123	697.750171
50	12:00	693.249991	697.750041
40	12:15	693.250017	697.750064
30	12:30	693.250085	697.750125
20	12:45	693.250135	697.750183
10	1:00	693.250197	697.750241
0	1:15	693.250276	697.750322
-10	1:30	693.250317	697.750361
-20	1:45	693.250319	697.750353
-30	2:00	693.250437	697.750474

The recorded data indicates that the frequency stability requirements of FCC Rule 2.1055 were met.