Selecting the right parameters when conducting dynamic mechanical measurements on the DMA 2980 is very important for achieving accurate and reproducible results. Parameter selection is also typically the most frequent question for new users. The DMA 2980 is equipped with an on-line signal display that aids the user in selecting valid instrument parameters. After measuring sample dimensions, and mounting the sample in the appropriate clamp, press the MEASURE key on the 2980 module keypad and view the signal display. When running a dynamic experiment (multifrequency and multistrain mode) pay special attention to the following signals:

**Amplitude:** Should achieve and maintain the value programmed. If running a multistrain experiment, this amplitude will cycle through the values programmed. It should be noted that the interpretation of the data may rely on linear viscoelastic theory in which case the data should be collected at an amplitude within the linear viscoelastic region of the material. See application brief TS-61 for a description on measuring the linear viscoelastic region of a material.

**Stiffness:** Should be within instruments measurable range of 100 N/m to 10,000,000 N/m. For additional information see TS-63 Determining the Optimum Sample Size for Testing a Film in the DMA 2980.

**Drive Force:** Drive force should be between 0.0001 N and 18 N. If the drive force is not within range, either increase the programmed amplitude to increase the drive force or increase the stiffness of the sample by changing the physical dimensions of the sample. Increasing the frequency will also increase the drive force.

**Static Force:** If Force Track (formerly Autostrain) is used, the static force should adjust to be the set percentage greater than the drive force required to maintain the amplitude programmed. For example, say an amplitude of 20 microns is selected with an auto strain setting of 120%. If the instrument requires 1 N of dynamic force to maintain the set amplitude, the static force should adjust to 1.2 N. In the above example, a Force Track setting of 120% was used. If using constant static force mode, the static force should read the value set in instrument parameters.

If the initial conditions are acceptable, i.e. smooth oscillation and good modulus values, then start the experiment. If the values are not acceptable, then change conditions appropriately.