

Steady State Dynamics Analysis

This template can be used for setting up a Steady State Dynamics (SSD) analysis with base acceleration loading, corresponding to a component being bolted to a shaker table and submitted to a constant amplitude (in-phase loading) sine-sweep excitation. The global excitation direction is given by the parameter **NDOF** (1=X, 2=Y, 3=Z). The SSD analysis will be performed using a modal basis, and the template includes the keywords for the required eigenvalue analysis.

Give min (**FMNEX**) and max excitation frequency (**FMXEX**); eigenvalues will be requested up to a frequency of twice ($2.0 \times \text{FMXEX}$) the max excitation frequency. The scaling factor for the acceleration loading is given by the parameter **GFAC** (default value 9810. corresponds to 1g in the mm-tonne-s unit system), see Figure 1.

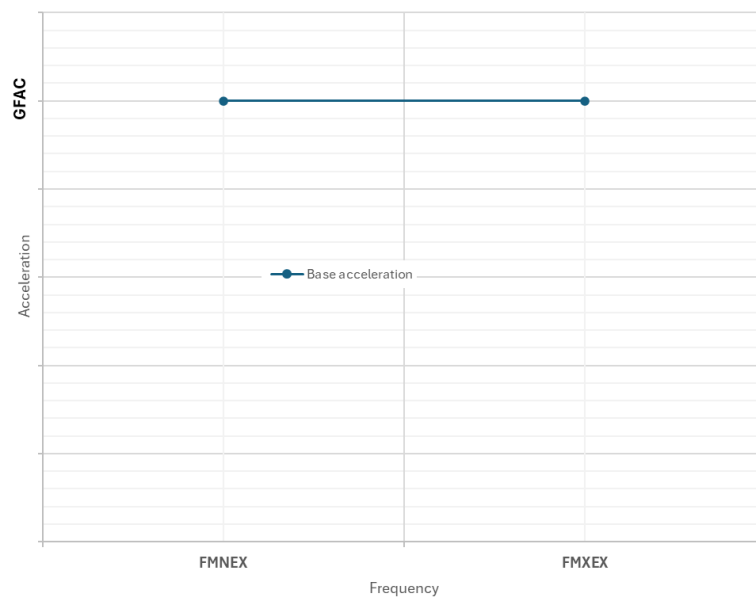


Figure 1. Predefined constant amplitude (GFAC) excitation between frequencies FMNEX and FMXEX.

A constant modal damping (fraction of critical damping) is used in this template, given by the parameter **MDMP**.

Specify the number of output frequencies for 3d database (d3ssd) by the parameter **NFRQ3** and curve plot (nodout_ssd, elout_ssd) results by the parameter **NFRQ2**. Linear spacing will be assumed in this template, see Figure 2 (more advanced options for spacing are available).

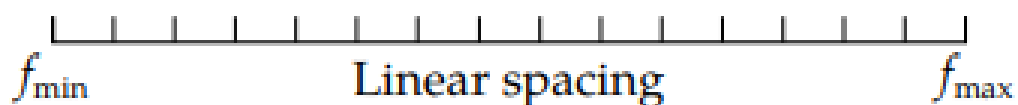


Figure 2. Linear spacing is assumed for the output frequencies.