

The frequency pullability of the crystal is not enough or the pulling range is asymmetric.

(1) As shown below, there is inverse correlation between the load capacitance of circuit and pullability. It shows that the frequency pulling range will be larger when the load capacitance gets smaller, vice versa.

(2) On the other hand, the crystal characteristics also affects the frequency pulling range. For instance, there are Trim Sensitivity (TS), C_0 , and C_1 . The fractional frequency change for an increment change of the load capacitance is called TS. The frequency pullability gets larger when C_1 gets larger or C_0 gets smaller.

(3) If the pulling range is asymmetric, i.e. the pulling of one side isn't enough and the other is too large, we can adjust the load capacitance value of crystal.