Low Temperature Scanning Tunneling Microscopy (LT-STM) can be used not only to image but also to manipulate single atoms and molecules in a controlled way. We have studied organic molecules from the so-called Lander “family”. They are well suited for a manipulation study because they exhibit “legs”, which are rotatable around their bonds to the central molecular wire. Different stable conformations are therefore observed upon adsorption on a metal surface. The Lander molecules can be moved laterally on copper terraces using the STM tip. A particularly interesting system is studied when the molecule is adsorbed on a metallic nanostructure, made up of two adjacent rows of copper atoms. In this case, the entire molecule can be manipulated in small steps along the nanostructure. Moreover, reversible internal changes can be induced to the molecule by lateral manipulation with the STM tip, leading to different conformations. Differently from the case of a molecule on the terrace, only one pair of legs is rotated, while the rest of the molecule does not change. We present two ways of inducing these internal conformational changes: lateral manipulation, i.e. by moving the STM tip across the molecule, and manipulation by a vertical approach of the tip. The results are discussed by means of the manipulation parameters: the tip height and the tunneling voltage.