

Bistable Aerial Platform

Researchers at the University of South Florida have invented a bistable MEMS platform, called the Bistable Aerial Platform. This compliant mechanism converts a rotational input to an ortho-planar displacement of a platform with two stable equilibrium positions, up and down.

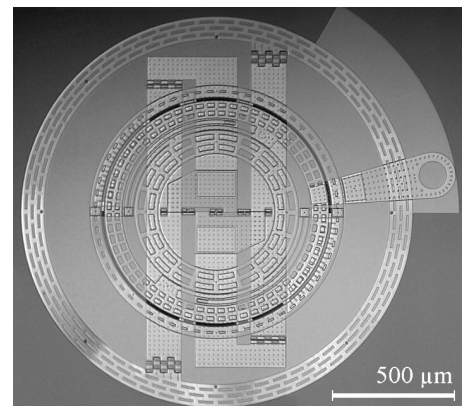
At the micro-level, it is unique in that it is the first MEMS platform that can maintain either its up or down position without a constant input force due to bistability. Additionally, the platform itself is among the largest surface micro-machined surfaces to be raised out-of-plane.

As a low-power micro-machined surface that can be raised out-of-plane, this mechanism could be used for various applications in a wide variety of fields. Potential applications for the device include micro-optics as a mirrored platform in DLP projectors, in tactile displays as a controlled array of Braille dots, or as an integrated micro-antenna that uses the raised platform for RF signals.

ADVANTAGES:

- **First MEMS platform to maintain bi-stable equilibrium positions without a constant input force**
- **Platform is among the largest micro-machined surfaces to be raised out of plane**
- **Can be applied to a wide variety of applications**
- **May be built at a smaller scale, as well**

Unique MEMS Platform



Top View of Bistable Aerial Platform

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