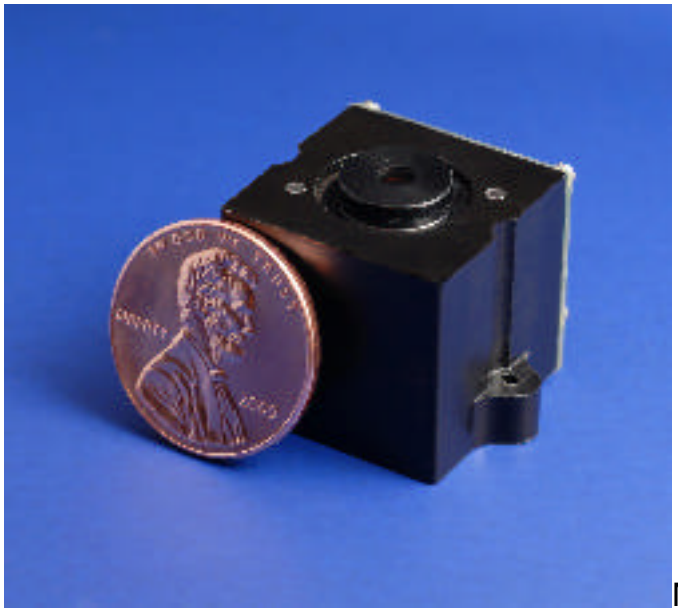
Miniature Focus Modules Provide Precise Lens Motion



New Scale Technologies Inc. offers an M3-F focus module for miniature OEM cameras used in handheld products; portable biometric sensors; and medical diagnostic and imaging devices. At only 20 x 22 x 18.5 mm (about the same dimensions as a fixed lens holder), the M3-F focus module improves image quality over a wide range of focus distances without adding volume or significantly increasing power usage.
All lens motion functions are fully integrated in the M3-F module, including actuator, position sensor, guide mechanism, drive and control electronics, and software. This extreme level of miniaturization and integration highlights New Scale's micro-mechatronics capabilities.

With on-board closed-loop PID control, M3-F modules are designed for ease of integration. The microprocessor accepts PID closed-loop system tuning commands, as well as high-level input commands such as "move specified distance," via standard serial interface (I2C, SPI, or USART). No external controller is needed.

Modules provide millimeters of lens motion with 0.5 micrometer position resolution, better than 30 micrometer accuracy, and better than +/-0.5 degree angular alignment. Based on New Scale's M3 micro-mechatronics module design platform, the M3-F modules are quickly customized to OEM specifications for lens (from M8 to M12 size, up to 5 grams mass), image sensor, focal length, board camera PCB mounting pattern, and other requirements.

M3-F modules accept 3.3V input voltage for battery-powered operation. They draw approximately 470 mW of power while moving and 130 mW quiescent. Weight is approximately six grams without lens.

Source URL (retrieved on *03/09/2014 - 11:58am*):
http://www.mdtmag.com/product-releases/2010/06/miniature-focus-modules-provide-precise-lens-motion