

New Scale News

Your update on ingeniously small motion systems

January 2011

Greetings!

Welcome to this issue of New Scale News, your update on miniature motion technology and applications.

This month we're launching our M3-L linear closed-loop motion module, ideal for **optical and RF tuning** as well as many other medical, military and commercial applications where you need small size and high-resolution motion. Check it out at Photonics West or visit our website for videos, specifications and application information.

As always, please [contact us](#) with questions or comments.

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~ M3-L linear motion module has 0.5 micron resolution; integrates actuator and closed-loop controls in one tiny package

The M3-L module is the smallest, highest-resolution closed-loop linear motion control system on the market. It offers:

- **0.5 micron** position resolution
- **Total** size less than 27.5 x 13 x 7.5 mm
- Integrated closed-loop controls: no external controller

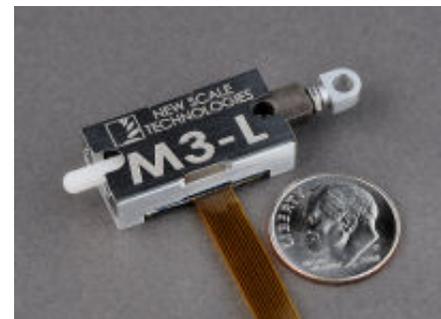
All motion and control functions are in the module: piezoelectric micro motor, position sensor, linear guide mechanism, motor driver, control processor and software. The standard serial interface (I2C or SPI) accepts high-level input commands such as "move specified distance," as well as PID closed-loop system tuning parameters.

Applications include precision motion control of variable inductors, trimming capacitors and optical elements for RF, microwave and photonics tuning; miniature optical and hand-held instruments; aerospace and UAV controls; and biomedical systems including fluid controls and microsurgery.

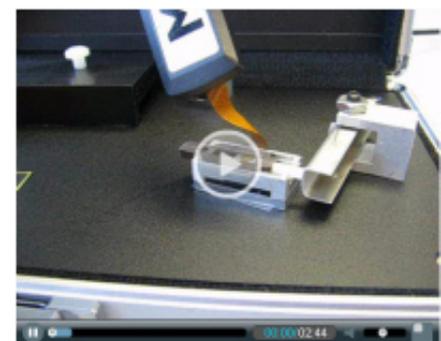
[Get details and specifications](#)

[Download data sheet with drawings](#) (PDF)

[View the video](#)



M3-L linear module with closed-loop controls integrated in a 17.5 x 13 x 7.5 mm package

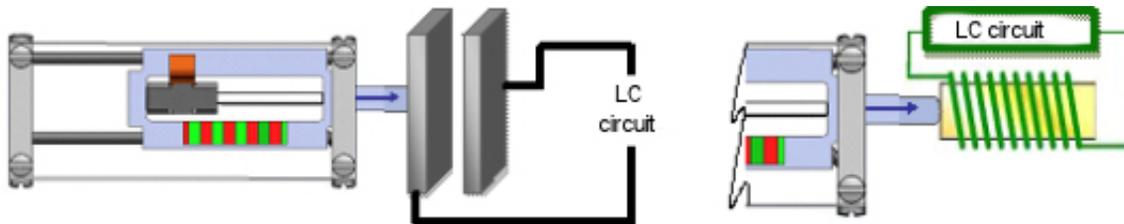


[View the video \(3 minutes\)](#)

~ Application focus: RF, microwave and photonics tuning systems

The new M3-L closed-loop motion system is ideal for motorizing variable inductors, trimming capacitors and optical elements in RF, microwave and photonics tuning applications. Its small size and high resolution enable smaller, higher-performance systems.

M3-L modules have low power consumption and maintain position during power-off. They use a 3.3 V input for battery-powered operation and weigh less than 5 grams, making them ideal for field-deployable and portable systems.



Application example: an M3-L module can move trimming capacitors or variable inductors for high-resolution RF tuning

System input to the M3-L module is provided as high-level commands from the system microprocessor via standard I2C or SPI serial interface. No external control board is needed.

[Learn more about the M3-L for optical and RF tuning](#)

~ SQUIGGLE RV takes "Best Electronic Design" award

New Scale Technologies has won a "Best Electronic Design" award from *Electronic Design magazine* for our SQUIGGLE RV linear drive system, the piezoelectric micro motor and drive chip combination that is integrated into our M3 micro-mechatronic modules.

The drive system took top honors in the components category for motors and motion-control systems. Other winners were Apple's iPad in the consumer electronics category, Osram Sylvania's latest LED in the display components category, and Intel's Atom Processor E600 Series in the embedded microprocessors category.

Electronic Design editor Mat Dirjish noted that each new version of the SQUIGGLE motor has come with greater improvements, most recently the introduction of a driver chip smaller than the motor itself, and the ability to operate directly from a battery as low as 2.3 VDC without the need for voltage boost circuits.

The small size and reduced voltage requirement are industry firsts for miniature piezo motor systems, creating a micro motor and drive combination that is more than five times smaller and uses 40% less power than comparable electromagnetic linear drive



systems.

Award-winning SQUIGGLE RV
micro motor and driver

[Read the news release](#)

[Read more about the 2010 "Best Electronic Design" awards on *electronicdesign.com*](#)

~ Meet us at Photonics West



January 25-27 | San Francisco, CA | Booth 610

New Scale will demonstrate the M3-L linear actuator at Photonics West in San Francisco Live demos will include a laser steering application and a capacitive tuning application. We'll also be showing our M3-F focus module for compact machine vision and biometric cameras.

[Visit the Photonics West website](#) for conference information and registration.

[Send us an email](#) if you would like to schedule a personal meeting at the conference, or if you can't attend but would like to learn more about our products.

~ Be our guest at MD&M West



Feb. 8-10 | Anaheim, CA | Booth 1349

Register online as our guest, using promo code XG, and receive free admission to the exhibit hall - a \$55 value.

New Scale will demonstrate the [M3-L](#) linear actuator for use in fluidics and valve controls, microsurgical manipulation, and precision photonics and optical controls in a diverse array of biomedical products such as lab instrumentation, portable medical devices and endoscopic surgical devices.

You can also see our [M3-F](#) focus module for lens control and laser tuning in diagnostic imaging systems including point of care diagnostics, real-time automated data collection and augmented vision systems.

[Visit the MD&M website](#) for conference information and registration.

[Send us an email](#) if you would like to schedule a personal meeting at the conference, or if you can't attend but would like to learn more about how we can help with your [medical applications](#).

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