

New Scale News

Your update on ingeniously small motion systems

March 2010

Greetings!

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

This month we feature our new M3 design platform that speeds development of micro-mechatronic modules for *closed-loop motion on a fingertip*, no external controller!

We have a lot of interesting work going on the defense and security sector as well. See us at DS&S in Orlando April 6-8 or [contact us](#) to learn more.

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~ M3 Micro-Mechatronic Module Design Platform: rapid development of custom closed-loop actuators with on-board PID control

This month we announced our M3 Micro-Mechatronic Module Design Platform for rapid development of custom closed-loop micro actuator modules. Building on our miniature SQUIGGLE motor and TRACKER position sensor technology, this design platform yields a complete closed-loop actuator on a printed circuit board of 12 x 30 mm or less.

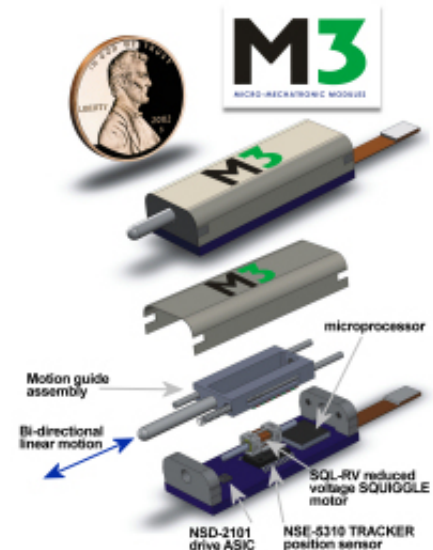
No external control board is necessary; simple serial commands drive an on-board PID controller using a standard I2C, SPI or USART interface. Modules have low power consumption and 3.3V input voltage for battery-powered operation.

The basic M3 Design Platform consists of:

- **An SQL-RV-1.8** reduced voltage SQUIGGLE RV micro motor
- **An NSD-2101** motor driver
- **A TRACKER NSE-5310** position sensor (encoder)
- **An on-board microprocessor** for PID control

These components, mounted on a **miniature printed circuit board**, comprise the core of the M3 Design Platform. On this foundation, we work with you to adapt one of several **base mechanical configurations** to suit your specific OEM application.

While performance is tuned to your requirements, typical specifications for a linear drive system based on the M3 Design Platform include 0.5 micron position resolution, up to 50 grams force load, 10 mm/sec speed, and up to 20 mm travel range.



Example: linear module built on the M3 design platform



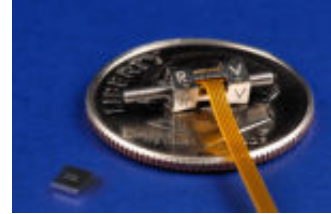
M3 base platform

With the M3 Design Platform, we make miniature motion control integration extremely simple for our OEM customers. Use it to create a drop-in motion module for your miniature optical instruments, lasers and photonics systems, aerospace controls, biomedical systems and more.

- [Learn more](#) about the M3 Design Platform.
- [Fill out the specification worksheet](#) and we'll get back to you with a proposal for a custom M3-L linear module.

~ SQUIGGLE micro motors drive auto-tracking steerable laser range finder project for the US Army

New Scale's piezoelectric SQUIGGLE micro motors drive a unique **auto-tracking steerable laser range finder** that [Intelligent Automation, Inc.](#) is developing for the U.S. Army under a Broad Agency Announcement (BAA) contract. Intelligent Automation has demonstrated a fully functional prototype and is now working to further enhance target tracking performance.



SQUIGGLE motor and drive ASIC

New Scale is a key subcontractor to Intelligent Automation in the BAA contract, and collaborates with Intelligent Automation on research and development projects for a wide range of applications.

"New Scale Technologies is an extremely innovative firm," said Benjamin Bachrach, vice-president of Intelligent Automation. "Their unique line of small size, low power consumption linear actuators is ideally suited for many advanced applications in defense and security."

We're excited to be working with this exceptional R&D company, responding to the complex technological requirements of the U.S. government and commercial clients.

~ More defense & security applications

Our SQUIGGLE motors, TRACKER position sensors and micro-mechatronic modules are used in a number of other defense and security applications. These include:

- Laser range finding and sighting applications
- Optical focus in rugged hand-held computers with built-in biometrics
- UAVs
- Continuous alignment of cooled optics in cooled-detector imaging systems for night vision and remote sensing
- Optical fiber positioning in aerospace instrument calibration systems



~ Meet us at DS&S April 6-8 in Orlando

Stop by our **booth #1331** at the **SPIE Defense, Security & Sensing (DS&S)** conference in Orlando April 6-8 to learn more about our motors, sensors and micro-mechatronic systems for defense and security applications.



Don't miss our product presentation Tuesday, April 6 at 3:30 pm in the Cypress Hall Foyer: "Reduced Voltage SQUIGGLE RV Micro-Mechatronic Modules"

Or [email us](#) for more information.

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