Technical Article

Spin Your Stepper Automatically

Matt Hein

Sometimes you just want to make your stepper motor spin without the hassle of configuring the driver. Open-loop motor control was supposed to be easy … right? Cue the endless complaints about decay-mode optimization and ideal stepper motor performance.

TI designed its new smart tune technology to simplify stepper motor tuning and eliminate the iterative process most of us have experienced. Smart tune can adapt to changes in system inputs or motor characteristics without you having to tune your motor again. No, this technology will not help your music career, but hopefully, it will prevent your stepper motor from "singing."

Watch this video for a quick introduction to smart tune technology and how it can help you save weeks to months of design time. You'll find this technology on the DRV8846 and DRV8880.

Additional Resources

- Accelerate development with the DRV8846EVM and DRV8880EVM evaluation modules.
- Download the DRV8846 and DRV8880 data sheets.
- Download the white paper, "Spin a stepper motor, skip the decay".
- Check out these two TI Designs reference designs:
  - 24V Stepper Motor Design with Smart Tune Reference Design.
  - 3D Printer Controller (12V).

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES “AS IS” AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI’s products are provided subject to TI’s Terms of Sale or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI’s provision of these resources does not expand or otherwise alter TI’s applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265