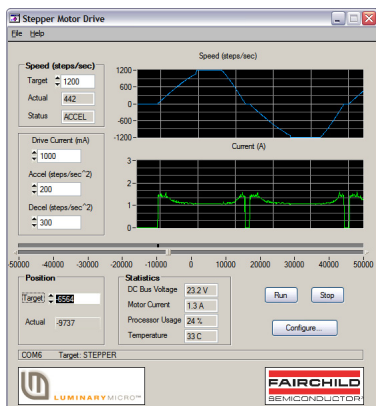# Stellaris® Stepper Motor Reference Design Kit (RDK)

The Luminary Micro Stellaris Stepper Motor Control Reference Design Kit (Stepper RDK) contains all the necessary hardware and software for you to design, develop, and integrate your stepper motor applications. The Stepper RDK combines the strength and flexibility of Luminary Micro's Stellaris microcontrollers with Fairchild Semiconductor's gate drivers and MOSFETs to create an advanced stepper motor control design that has been carefully engineered for performance, cost, and flexibility. Stepper motors are particularly suited for use in two- and three-axis CNC equipment, sorting and grading equipment, specialized printers and scanners, and factory automation.

Features

The Stepper RDK contains Luminary Micro's new feature-rich Stellaris LM3S617 microcontroller designed for motion control applications, a Fairchild Semiconductor power stage consisting of Fairchild's FAN73832 HVIC Driver and FDMS3672 MOSFET, a NEMA23 stepper motor, a graphical control program for Windows™, and accompanying cables, source code, and documentation. The Stepper RDK takes advantage of the integrated features of the Stellaris microcontroller and the processing power of the ARM® Cortex™-M3 core to implement chopper control without the need for an external step controller or comparator circuits. The graphical control program allows you to experiment with varying drive parameters and observe the effect on motor performance.

The Stepper RDK includes the following product features:

- Advanced chopper control of bipolar stepper motors
- Software-based chopper control to operate high-torque steppers at high step rates
- Fast and slow decay modes
- Full step and half step modes
- High step rates up to 10,000 steps/sec
- Programmable holding current
- Virtual COM port through integrated USB
- Support for external debugger through standard 20-pin ARM header
- Easy power and motor connection using pluggable terminal blocks
- Bootloader for firmware upgrades over serial port

Kit Contents

The Stepper RDK ships with everything needed to evaluate bipolar stepper motor control including:

- Main control circuit board
- NEMA23 stepper motor
- 24 V wall power supply
- USB cable
- Graphical control program for Windows™ on CD
- Quickstart Guide, User's Manual, Software Reference Manual, source code, BOM, schematics, and Gerber files on CD

Ordering Information

Product Number	Description
RDK-Stepper	Stellaris® Stepper Motor Reference Design Kit

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PB-RDKStepper-00