



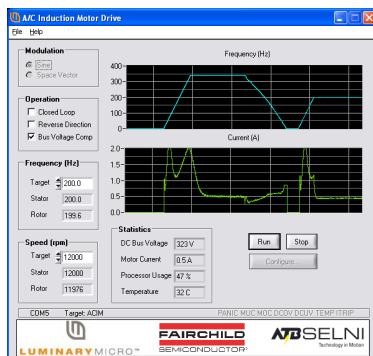
Stellaris® AC Induction Motor Reference Design Kit (RDK)

LUMINARY MICRO

The Luminary Micro Stellaris AC Induction Motor Reference Design Kit (ACIM RDK) contains all the necessary hardware and software for you to design, develop, and integrate your AC induction motor applications. The ACIM RDK combines the strength and flexibility of Luminary Micro's Stellaris microcontrollers with Fairchild Semiconductor's power modules to create an advanced variable speed AC motor control design that has been carefully engineered for performance, cost, and flexibility. AC induction motors are particularly suited for use in major home appliances (refrigerators, dishwashers, washing machines, and dryers), residential and light commercial HVAC systems, and three-phase industrial motor drives.

Features

The ACIM RDK contains Luminary Micro's new feature-rich Stellaris LM3S818 microcontroller designed for motion control applications, Fairchild Semiconductor's FSBS10CH60 power module, a three-phase appliance AC motor, a graphical control program for Windows™, and accompanying cables, source code, and documentation. The ACIM RDK takes advantage of the integrated features of the Stellaris microcontroller and the processing power of the ARM® Cortex™-M3 core to implement energy-efficient, space vector modulation control. The graphical control program allows you to experiment with varying drive parameters and observe the effect on motor performance.



The ACIM RDK includes the following product features:

- Advanced motor control for three-phase and single-phase AC induction motors
- Accelerated integration process through a flexible platform
- Dynamic braking circuit

- Active in-rush control circuit
- Easily change line filter, bus capacitors, and JTAG interface
- Includes code for main control algorithms including space-vector modulation and sine control
- Accurate current sensing using split low-side current sensing
- Several isolated control input options including:
 - Virtual COM port through integrated USB port
 - Windows GUI application for configuration, control, and monitoring
 - Logic-level serial port
 - Speed potentiometer and mode switch
 - Speed and position monitoring using quadrature encoder/tachometer input
- Electrically isolated JTAG port for software debugging
- Bootloader for firmware upgrades over serial port

Kit Contents



The ACIM RDK ships with everything needed to evaluate AC induction motor control including:

- Main control circuit board with a factory-installed heat sink
- 3-phase appliance AC motor (0-20000 rpm)
- Power cables
- 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
MDL-ACIM	Stellaris® ACIM Control Board Only
RDK-ACIM	Stellaris® AC Induction Motor Reference Design Kit

Luminary Micro, Inc. • 108 Wild Basin, Suite 350 • Austin, TX 78746
Main: +1-512-279-8800 • Fax: +1-512-279-8879 • <http://www.luminarymicro.com> • sales@luminarymicro.com

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