Luminary Micro - MDL-ACIM - Motor Control Reference Design Kit

Product Overview:

The 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 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.

The Luminary Micro Stellaris Alternating Current Induction Motor Control Module (MDL-ACIM) is a rapid-time-to-market module solution that offers OEMs the capability of quickly adding AC induction motion control capability to any application. Combining the strength and flexibility of Luminary Micro's Stellaris microcontrollers with Fairchild Semiconductor's power modules creates an advanced ACIM motor control solution that has been carefully engineered for performance, cost, and flexibility. AC induction motors are particularly suited for use in major home appliances and white goods (refrigerators, dishwashers, washing machines, and dryers), residential and light commercial HVAC systems, and three-phase industrial motor drives.

Key Features:

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
- Boot loader for firmware upgrades over serial port

Ordering Information:

Products:

Part Number	Manufacturer	Farnell P/N	Newark P/N
MDL-ACIM	Luminary Micro	1712290	24R9714

Associated Products:

Part Number	Manufacturer	Description	Farnell P/N	Newark P/N
LM3S818-IQN50	Luminary Micro	Stellaris LM3S818 Microcontroller Industrial Temperature 48-pin LQFP	1494153	45P3703
FSBS10CH60	Fairchild Semiconductor	Smart Power Module	NA	43K6935

Similar Products:

Part Number	Manufacturer	Description	Support Device	Farnell P/N	Newark P/N
RDK-ACIM	Luminary Micro	Stellaris® AC Induction Motor Reference Design Kit	LM3S818	1494154	45P5041
MDL-ACIM-B	Luminary Micro	AC induction motor control board, volume packaging.	LM3S818	NA	24R9714

Document List:

Datasheets:

Part Number	Description	Size
MDL-ACIM	ACIM Board Data Sheet	212KB
LM3S818	LM3S818 Microcontroller Data Sheet	-
FSBS10CH60	10A, Smart Power Module	576KB

Application Notes:

File Name	Size
Programming the On-Chip Flash Memory in a Stellaris Microcontroller	-
Clocking options for Stellaris Family Microcontrollers	-
Using a Stellaris Microcontroller as an I/O Processor	-
Using the Stellaris Serial Flash Loader	-
Adding 32KB of Serial SRAM to a Stellaris Microcontroller	-
Using the Stellaris Microcontroller Analog-to-Digital Converter	-
pgrading to Luminary Micro's Stellaris Microcontrollers from Microchip's PIC Microcontrollers	-
Implementing RS-232 Flow Control on a Stellaris® Microcontroller	-
Using Schematic Part Libraries and PCB Footprint Libraries for Stellaris® Microcontrollers	-
Flash Protection for Stellaris® Microcontrollers	-
Optimizing Code Performance and Size for Stellaris Microcontrollers	-
Using Stellaris Microcontrollers Internal Memory to Emulate EEPROM	-
Software UART for Stellaris® Microcontrollers	-
Using the IEC 60730 Standard for Safe and Reliable Operation of Stellaris® Microcontrollers	-
AN-9035: Smart Power Module Motion-SPM in Mini-DIP User's Guide	1697KB