The PowerCore FLEX™ is a small circuit board containing a complete microprocessor system with many optional features such as Ethernet, a power supply or battery-backed memory. The PowerCore FLEX is designed to plug into a customer-designed motherboard and serve as the intelligent heart of a system that typically connects to a network or the Internet. Using the complete Dynamic C® development platform that is included free with the low-cost development kit the user can create complex or simple software as may suit his application.

The PowerCore FLEX can be customized on a fast-turn basis according to customer request, adding or deleting various options. This can result in substantial savings for the volume customer. Customizable options include microprocessor clock speed, power supply, memory, analog features, and Ethernet capability. PowerCore FLEX can be customized at the Rabbit Semiconductor web site via the user-friendly On-Line Flex Configurator Tool.

Advantages of FLEX Manufacturing

- Customized to your needs
- Lower lead times compared to other custom boards
- There is no minimum purchase
- No upfront or hidden cost associated with traditional "customizing" of product
- Freedom to choose over 1000 different configurations
- Inexpensive way of choosing the right board to use in production

The PowerCore FLEX is the next generation of the Rabbit Microprocessor Core Modules. By using the PowerCore FLEX as the central element in a microprocessor-based system, the engineer can greatly speed up design time and lower the design risk. The PowerCore can be ordered with various optional subsystems, including a switching power supply and selected analog features. The PowerCore is supported by networking software as well as drivers for the various special features. The PowerCore starter kit includes extensive software libraries and a demo board with various circuits that can be implemented in a PowerCore system
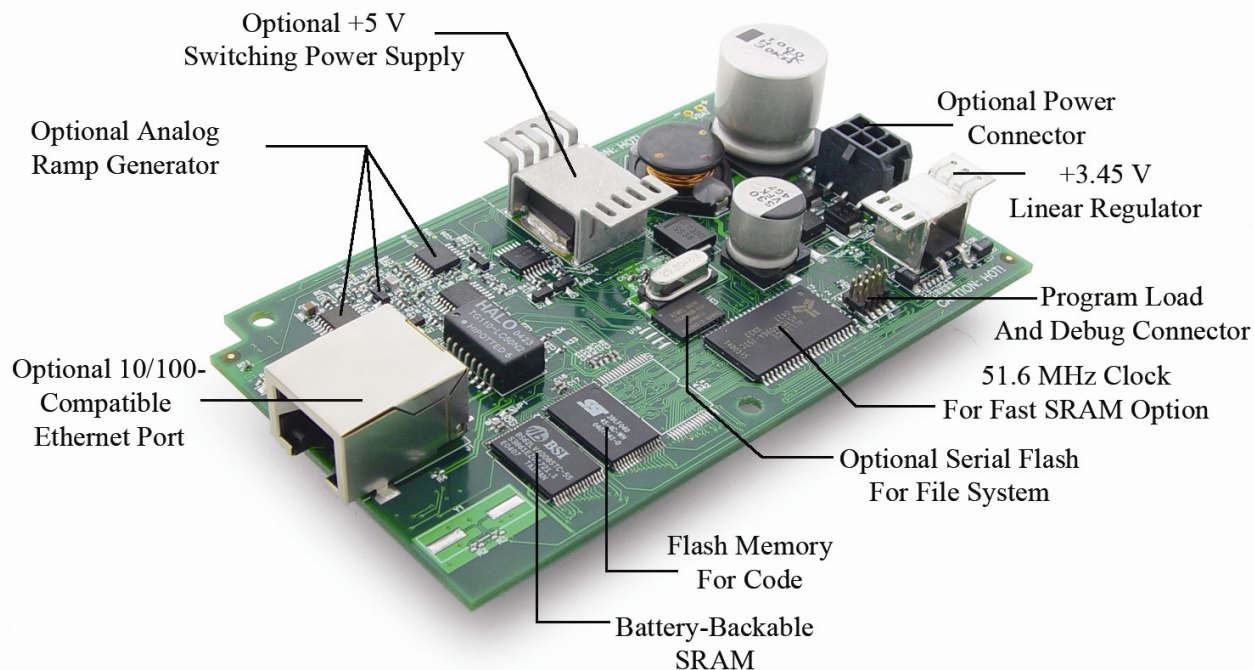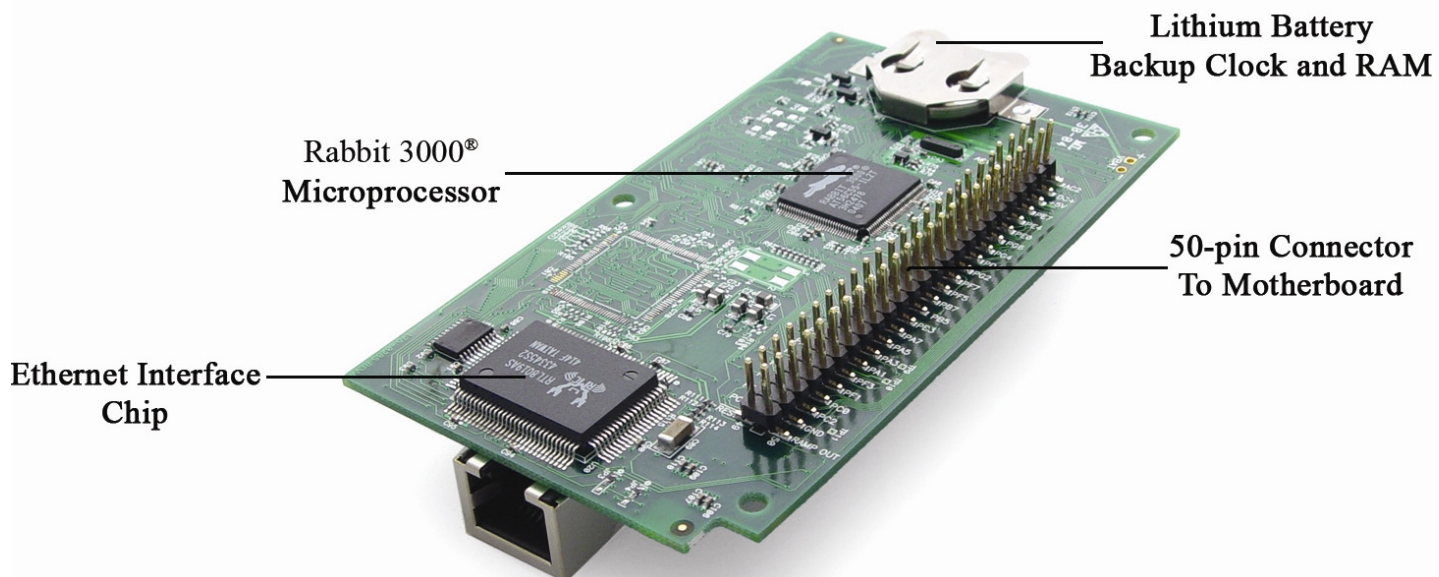

Figure 1: PowerCore 3800 Top View

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Figure 2: PowerCore 3800 Bottom View

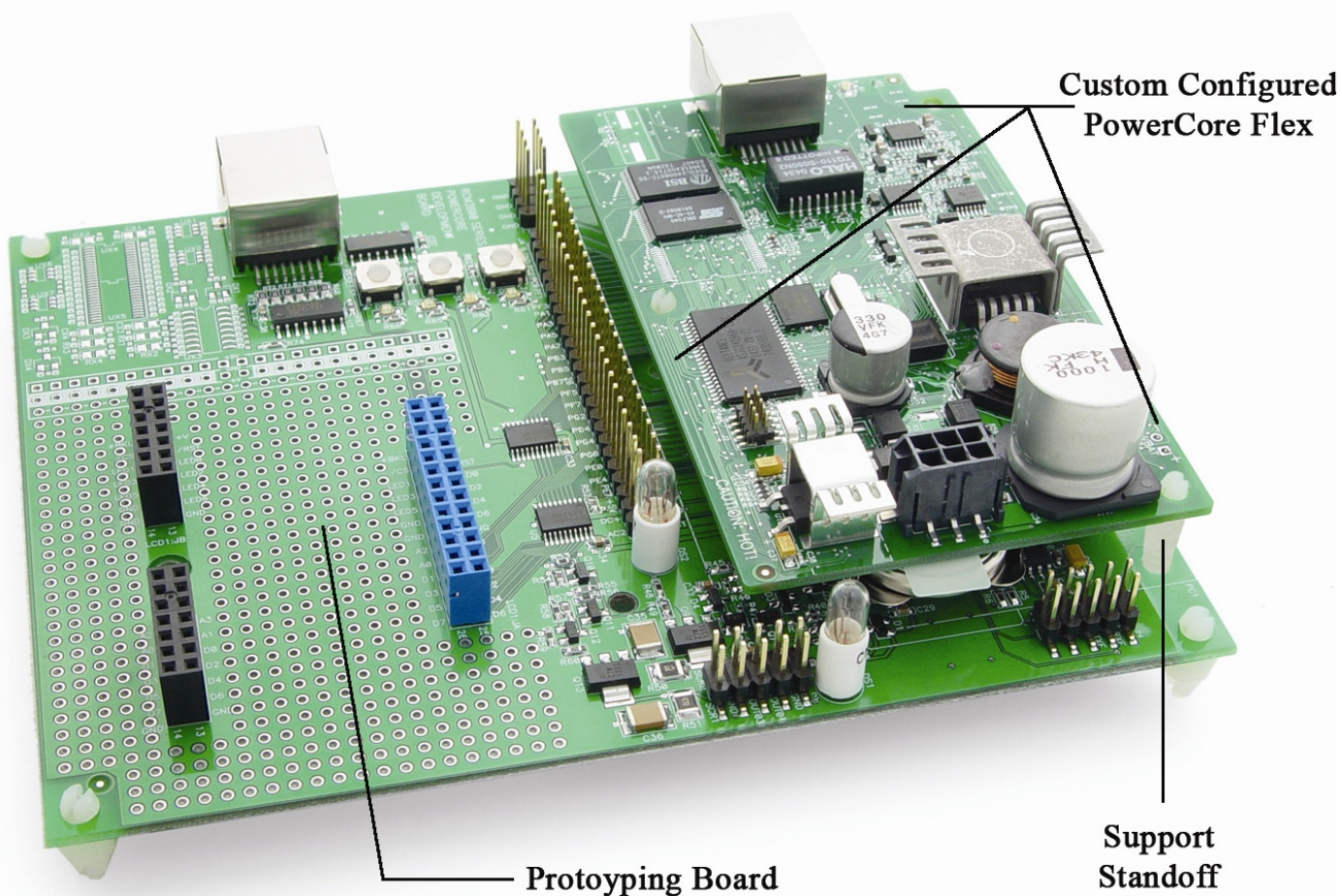Lithium Battery
Backup Clock and RAM

Rabbit 3000®
Microprocessor

50-pin Connector
To Motherboard

Ethernet Interface
Chip

Figure 3: PowerCore 3800 on Prototyping Board

Custom Configured
PowerCore Flex

Protoyping Board

Support
Standoff

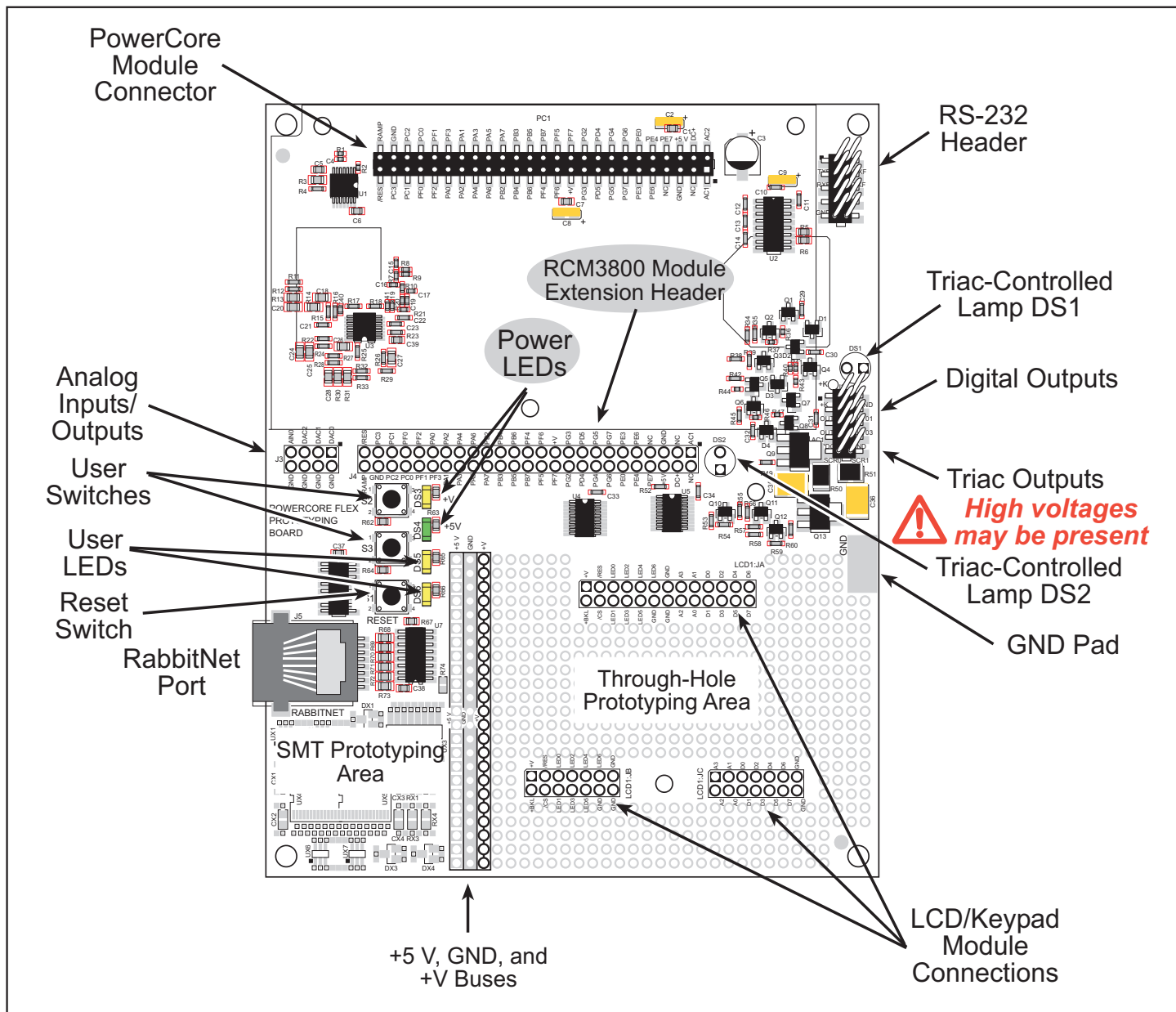**www.rabbitsemiconductor.com**

1/4/2005

Figure 4: Prototyping Board Diagram

Typical Application Areas

With the PowerCore FLEX, the user can create an embedded microprocessor system by designing a motherboard. Reference designs are included in the users' manual for various input/output circuits including transistor drivers, drivers for keypads or small LCD displays, and analog input circuits. With the Ethernet networking option, your product can be interfaced to local networks or the Internet. With the RabbitWeb software module, the PowerCore FLEX can be easily programmed to serve web pages, send emails and many similar tasks based on the many networking protocols supported. Application areas include embedded networked devices in such areas as point of sale, security, remote monitoring and diagnostics.

Advantages and Features

Created specifically to reduce the effort required to build embedded control applications, the PowerCore FLEX is available with 1MB Flash, 1MB SRAM, and 1MB Serial Flash as well as 5 serial ports, 39 I/O, real-time clock, and Ethernet. On-board analog features include a ramp generator that, coupled with comparators and the Input capture capabilities of the Rabbit 3000 microprocessor, allows

inexpensive measurement of analog voltages for applications such as temperature measurement, resistance measurement, 4–20 mA signal detection, etc. An on-board thermistor may be used to measure the local temperature. In addition, on-board AC crossover detection is available for triac AC control applications. The PowerCore family of core modules offers embedded system engineers a powerful solution that balances cost savings and performance while reducing design effort. In addition to the features unique to the PowerCore family, this newest addition to the Rabbit line provides all of the benefits that designers of Rabbit-based applications have come to expect.

Easy-to-Use Dynamic C Programming

A single cable connection from a PC serial port or USB port to the programming connector on the PowerCore FLEX allows compiling, downloading, and testing of software using our Integrated Development Environment without the use of in-circuit emulators.

Power Supply Features

The user does not have to design a power supply. The on-board power supply can accept AC or DC inputs, or the PowerCore can run directly from +5 V. The on-board power supply can supply +3.45 V and +5 V power to the user's motherboard, up to 550 mA at +3.45 V and up to 1800 mA at +5 V depending on PowerCore clock speed and options. In addition, if the PowerCore is driven with AC from a center-tapped transformer, the software has access to an AC waveform crossover detector that may be used to trigger triacs in various modes without the need for optically isolated trigger circuitry.

High Clock Speed

The PowerCore may be ordered with a 51.6 MHz or 25.8 MHz clock speed.

Supplementary Software

Supplementary software modules to expand Dynamic C are available. Available modules include
- SSL – Secure Socket Layer protocol support.
- RabbitWeb – Enables creation of web pages.
- FAT – FAT file support.
- PPP – Point-to-Point Protocol support.
- SNMP – Simple Network Management Protocol support.
- AES – Advanced Encryption Standard support.
- µC/OS-II – Real-time Kernel support.

Rugged Analog/Digital Converter Subsystem

A precision sawtooth ramp generator is an optional feature. Using comparators and the precision input pulse-capture feature of the Rabbit processor the user can create an accurate analog input subsystem. Low-cost comparators such as the LM339 have rugged inputs that survive electrical abuse. The cost per additional channel of A/D converter input around 5 cents. Motherboard design is easy because the suggested reference designs include filters to remove noise from the RAM and inputs, thus avoiding tricky and delicate analog design problems.
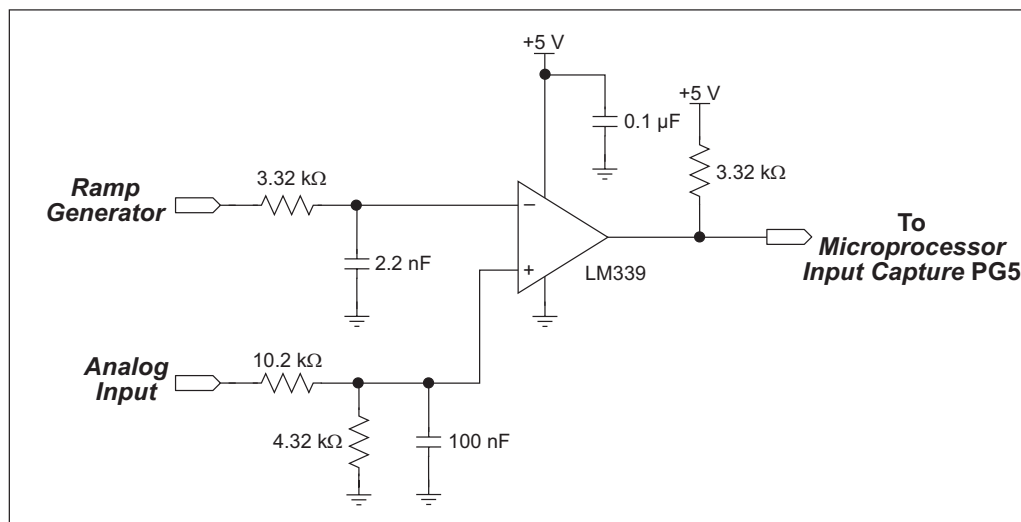

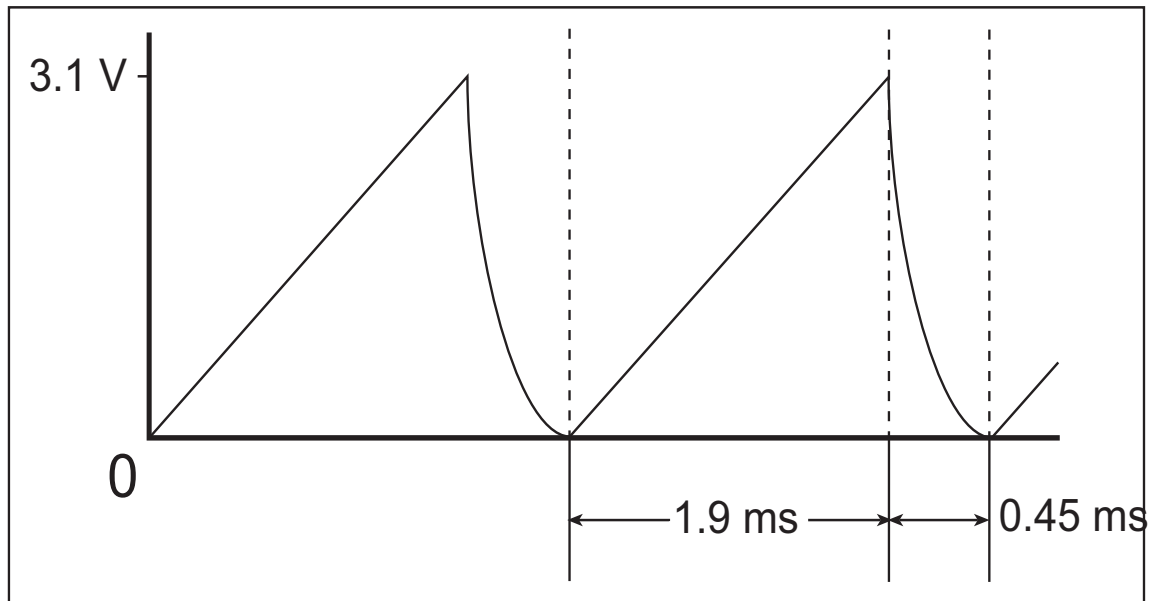**Figure 5: A/D Converter Schematic**

Figure 6: Ramp Generator Waveform

Rabbit-Based Features

The 50-pin motherboard connector provides the user with access to extensive Rabbit 3000 microprocessor features such as precision pulse measurement, 5 serial ports, I/O bus, infrared serial communications support, Input capture measurement, optical encoder support, and various types of parallel I/O. The precision ramp and power supply inputs/outputs are also available on the 50-pin connector.

Ethernet Interface

An optional Ethernet interface includes an RJ-45 jack and 10/100-compatible Ethernet. Extensive software including TCP/IP and associated protocols is included with Dynamic C for interfacing to the Internet or other network.

Wireless Ethernet

An accessory Wi-Fi® wireless Ethernet transceiver may be easily connected to the PowerCore. This device is fully supported with appropriate software. A short cable allows the wireless card to be mounted separately to ensure good propagation of the radio waves in various situations.

Features Related to the Rabbit 3000

The PowerCore FLEX has the following features which are integral to the Rabbit 3000.

- Clock spectrum spreader greatly reduces EMI and makes it easier to pass government radiated emission tests. Lowers emissions by approximately 15 dB.
- Auxiliary I/O bus can be enabled to provide an addressable bus separate from the high-speed memory bus. This bus is available on the motherboard connector of the Power-Core. Advantage: lowers EMI, simplifies design and ensures robust operation.
- Precision input measurement and pulse-width modulated outputs...Rotary optical encoder also supported.
- 5 serial ports plus programming port. Serial ports support asynchronous and synchronous protocols and very high data rates.
- Cryptographic engine allows public key algorithms to run rapidly. Provides support for SSL protocol.
- Clock throttle to adjust clock speed and power consumption.
- Easy interfacing to external devices.
- Battery-backable time/date clock.
- Support for battery-backed SRAM.

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Quick Manufacturing Options

Qty	Price
1-9	$55
10-99	$42
100-999	$37
1000-4999	$31
5000+	$29

Quantity 1 ▾

For orders less than 5 boards,
lead time is 5 working days.
For lead times greater than
5 boards, please call us.

[Save/Buy your Board]
[Reset to Default]

Alert Bar

Power Supply help

5V Regulator
● No Switcher
○ 1 Amp Switcher
○ 2 Amp Switcher

Input Circuit help

Power Supplied through 2x25 Connector
● Option 1 help
   External regulated 5V, No top friction lock connector
○ Option 2 help
   Unregulated DC, requires on-board switcher, No top friction lock connector

Power Supplied through 2x3 Molex Connector

Figure 7: On-Line Configurator

The PowerCore FLEX is customizable via the user-friendly On-Line FLEX Configurator Tool found at www.rabbitsemiconductor.com. Each customizable option is easily selectable. The Configurator Tool provides recommendations on preferred feature combinations, helping designers to achieve the most efficient custom board design.

Customizable Features

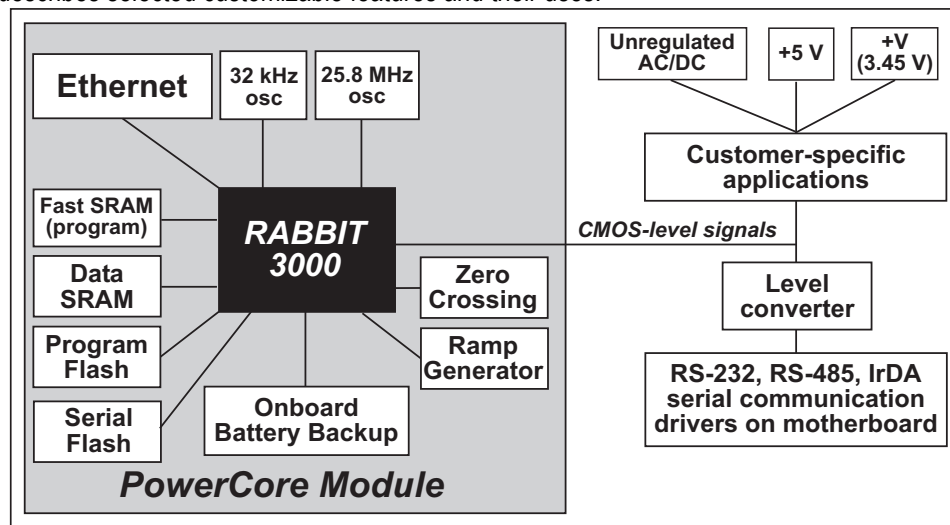The following section describes selected customizable features and their uses.

Figure 8: Configurable Features

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Power Supply

The following options:
1) Input +5 V (±10%)
2) AC or DC input with options for 1 A or 2 A +5 V regulator

Input for option 2 can be DC, AC, or AC with center tap. Additional filter caps may need to be added to the customer motherboard with option 2 depending on input values and current consumption, especially if using a half-wave rectifier. Power may be accessed through a 6-pin connector suitable for a wire harness. The alternative is to supply power from the motherboard. A center-tapped transformer or half-wave rectifier is required for use with triac circuits.

The two pre-configured PowerCore FLEX

Figure 9: Power Supply Schematic

models are configured for a full-wave, center-tapped AC transformer input option, but may also be driven from unregulated DC or a +5 V supply. Power may be supplied directly to the PowerCore via the friction-lock connector at header J3:

- via pins 2, 4, and 6 (24–60 V AC); note that center tap of transformer is connected to ground through pin 4 and resistors R57 and R58
- via pins 2 and 4 (8–43 V DC, unregulated for PowerCore with 2 A regulator; 9–40 V DC, unregulated for PowerCore with 1 A regulator)

Power may also be supplied to the PowerCore FLEX from the motherboard into which the PowerCore is plugged:

- via pins 1 and 2 of header J4 (24–60 V AC); note that center tap of transformer should be connected to ground
- via pins 4 and 5 of header J4 (8–43 V DC, unregulated for PowerCore with 2 A regulator; 9–40 V DC, unregulated for PowerCore with 1 A regulator)

The PowerCore FLEX also provides for the regulated voltages to be output for use on the motherboard or elsewhere:

- +5 V DC (up to 1.8 A from PowerCore with 2A supply, up to 550 mA from PowerCore with 1A supply) on pin 6, header J4 (connection to motherboard), and pin 1, header J3 (friction-lock connector)
- +3.45 V DC (300 mA available for motherboard with 51.6 MHz clock, 550 mA with 25.8 MHz clock) on pin 21, header J4 (connection to motherboard)

PowerCore FLEX Power-Supply Options

PowerCore FLEX boards may be configured with a power supply that meets your precise needs.

When no rectifiers or +5 V regulators are installed, regulated +5 V DC power must be supplied to the PowerCore FLEX board via pins 5 and 6 of header J4 or via pins 1 and 4 of the friction-lock connector at header J3. There is still a +3.45 V DC voltage regulator on-board to supply +3.45 V DC. Expect to draw up to 400 mA for a 51.6 MHz clock speed and 150 mA for a 25.8 MHz clock speed, depending on selected options.

PowerCore FLEX Input Circuitry

AC or DC voltage sources can be used. The PowerCore FLEX is fully configurable to use a wide range of power sources efficiently. It can accept regulated 5 V DC, unregulated 8–43 V DC with 2 A regulator option, unregulated 9–40 V DC with 1 A regulator option, and AC voltages ranging from 10 V to 30 V (or 60 V with a center-tapped transformer).

DC Input

For regulated 5 V DC input, no rectifiers or 5 V regulators are installed. The user must provide what the on-board regulator would have provided, mainly a 5 V source with a tolerance of ± 5% over temperature with a current capacity able to supply both the PowerCore FLEX as configured, plus whatever additional circuitry the user adds to the application. For unregulated DC input, one of two onboard
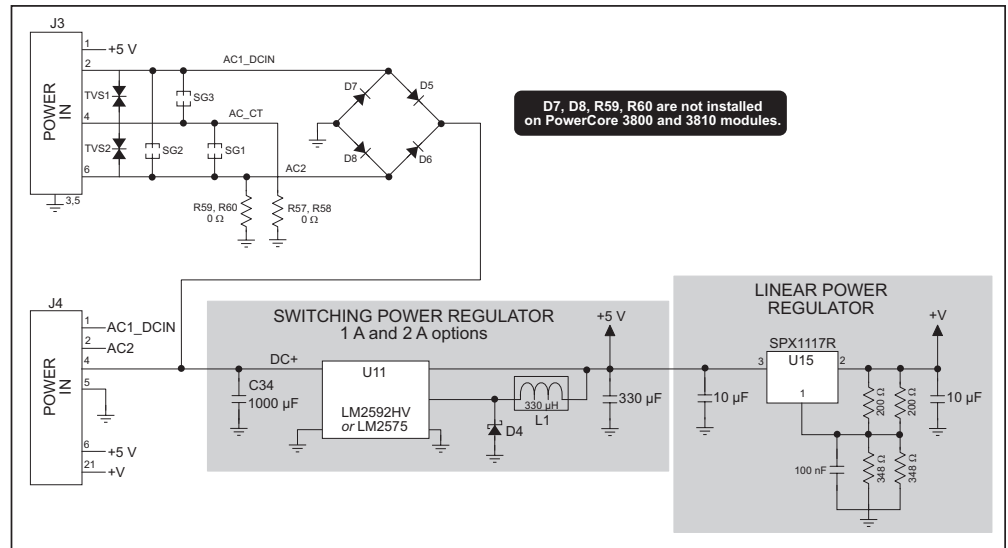
switching regulators is installed. The only difference between the two is how much current the regulator can regulate (1 A regulator, 9–40 V DC; 2 A regulator, 8–43 V DC). Either a 1 A regulator is installed, or a 2 A regulator is installed. Surge protection is included. TVS1 and TVS2 are transorbs that guard against voltage spikes that may be present on the power line to the PowerCore FLEX. Voltage spikes come from sources ranging from electrostatic discharge (ESD), to noisy inductive devices on the same power line such as solenoid valves, motors, and relays, to nearby lightning strikes. These voltage spikes are mitigated with the transorbs. The down side is that because the transorbs are active at any voltage above 43 V DC, the upper limit to a DC input is 43 V. Thus, for a regulated PowerCore FLEX with a 2 A regulator, the DC input voltage requirement is any voltage between 8 V and 43 V that will provide sufficient current to the circuit. The 1 A regulator is limited to 40 V input because the regulator chip itself is not specified to work with an input voltage exceeding 40 V DC.
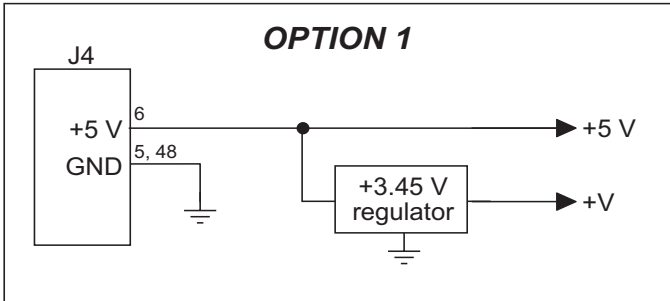

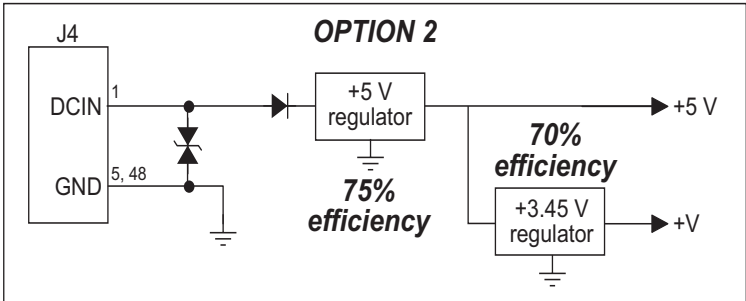**Figure 11: Option 1 -- External regulated 5 V, no top friction-lock connector**

Figure 10: Option 2 – Unregulated DC, requires on-board switching regulator, no top friction-lock connector

AC Input

There are three types of AC voltage rectification options, and each has its advantages and disadvantages. The three types are half-wave rectification, full-wave rectification, and full-wave rectification with a center-tapped transformer.

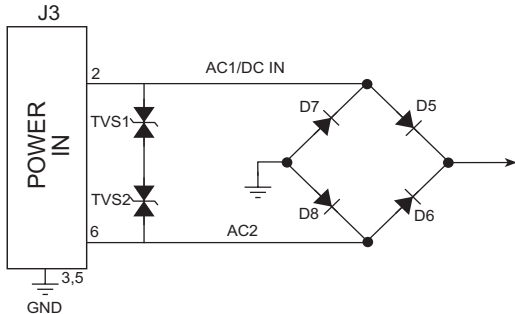### *Full-Wave Rectification (with no center-tapped transformer)*

Advantages include:
- Full-wave rectification can use a standard, less expensive two-terminal transformer.
- Full-wave rectification draws power from both halves of the AC wave and so the storage capacitor does not have to work as hard to supply continuous power, which means a lower AC input voltage can be used.

Disadvantages include:
- The cost of rectification is highest because four diodes are needed.
- Full-wave rectification does not allow power-supply ground to equal control-circuit ground.
- Power dissipated in rectification is twice that of a half-wave or a center-tapped full-wave rectifier configuration.
- There are two diode voltage drops, so a higher AC voltage must be presented to overcome the 1.4 V drop.

OPTION 3 FULL-WAVE BRIDGE

	2 A CONFIGURATION	1 A CONFIGURATION
Input Supply Requirements	12–36 V AC 9–51 V DC	10–29 V AC 10–41 V DC
Current Draw by Onboard Circuits	max I_Q = 150–400 mA @ +3.45 V	max I_Q = 150–400 mA @ +3.45 V
Output Current Available	700 mA - I_Q @ +3.45 V 2 A - I_Q - I_{3VMB} @ +5 V	700 mA - I_Q @ +3.45 V 1 A - I_Q - I_{3VMB} @ +5 V

NOTE: I_{3VMB} = current consumed by user's board at +3.45 V

Figure 12: Option 3 – Full-Wave Bridge Schematic

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Center-Tapped Transformer Full-Wave Rectification

Advantages include:

- Triac control is possible because the circuit ground potential is midway between positive and negative AC peaks.
- Center-tapped full-wave rectification allows power-supply ground (the transformer secondary side center tap) to equal control-circuit ground.
- Full-wave rectification draws power from both halves of the AC wave and so the storage capacitor does not have to work as hard to supply continuous power so a lower AC input voltage can be used.
- The cost of rectification is lower because only two diodes are needed.
- Power dissipated in rectification is minimal.
- There is only one diode drop in voltage (0.7 V), so a lower AC voltage may be presented.

Disadvantages include:

- A more expensive, center-tapped secondary-winding transformer must be connected to the circuit.
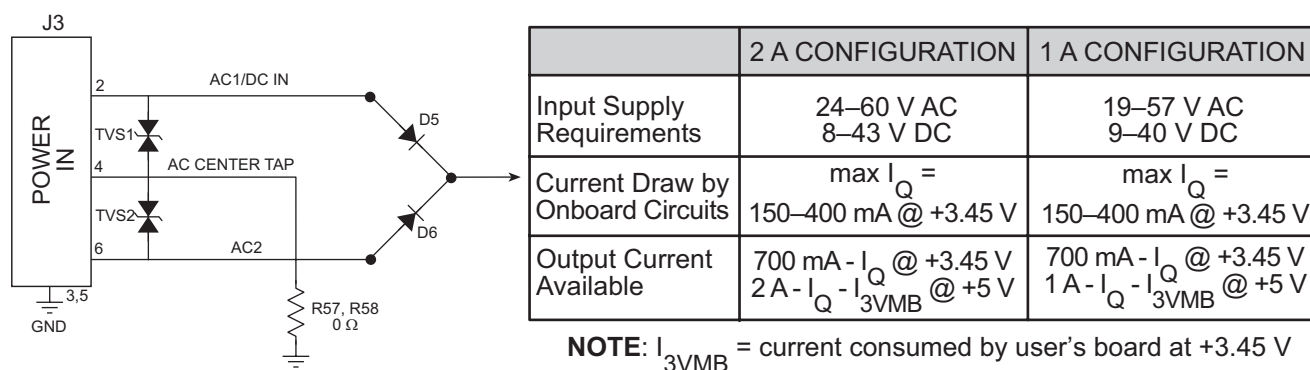
OPTION 4 FULL-WAVE CENTER-TAPPED

	2 A CONFIGURATION	1 A CONFIGURATION
Input Supply Requirements	24–60 V AC 8–43 V DC	19–57 V AC 9–40 V DC
Current Draw by Onboard Circuits	max I_Q = 150–400 mA @ +3.45 V	max I_Q = 150–400 mA @ +3.45 V
Output Current Available	700 mA - I_Q @ +3.45 V 2 A - I_Q - I_{3VMB} @ +5 V	700 mA - I_Q @ +3.45 V 1 A - I_Q - I_{3VMB} @ +5 V

NOTE: I_{3VMB} = current consumed by user's board at +3.45 V

Figure 13: Option 4 – Full-Wave Center-Tapped Schematic

Half-Wave Rectification

Advantages include:

- The cost of rectification is lowest because only one diode is needed.
- Half-wave rectification can use a standard, less expensive two-terminal transformer.
- Half-wave rectification can allow power-supply ground to equal control-circuit ground.
- Power dissipated in rectification is minimal.
- There is only one diode drop in voltage (0.7 V), so a lower AC voltage may be presented.

Disadvantages include:

- Half-wave rectification draws power from only half of the AC wave and so must rely heavily on a storage capacitor to supply continuous power, so a higher AC input voltage must be used.
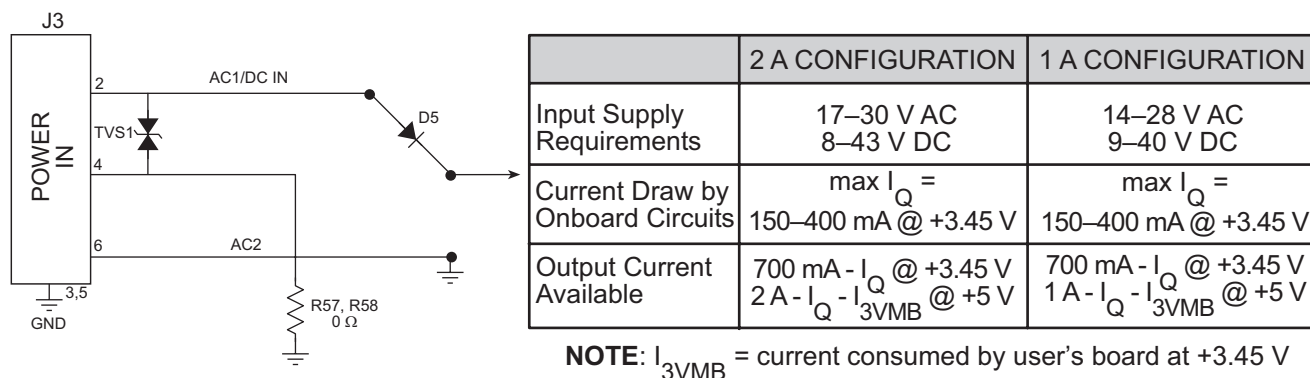
OPTION 5 HALF-WAVE RECTIFIER

	2 A CONFIGURATION	1 A CONFIGURATION
Input Supply Requirements	17–30 V AC 8–43 V DC	14–28 V AC 9–40 V DC
Current Draw by Onboard Circuits	max I_Q = 150–400 mA @ +3.45 V	max I_Q = 150–400 mA @ +3.45 V
Output Current Available	700 mA - I_Q @ +3.45 V 2 A - I_Q - I_{3VMB} @ +5 V	700 mA - I_Q @ +3.45 V 1 A - I_Q - I_{3VMB} @ +5 V

NOTE: I_{3VMB} = current consumed by user's board at +3.45 V

Figure 14: Option 5 – Half-Wave Rectifier Schematic

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Because all power flows through in only half of the AC cycle, the transformer must supply twice the current that would be used with a full-wave rectifier.

Clock Speed

51.6 MHz or 25.8 MHz. The 25.8 MHz option conserves power and can operate at higher ambient temperature.

Parallel Flash Memory

512K

Battery-Backable SRAM

256K or 512K, 512K is recommended for use with 51.8 MHz.

Coin Battery

Slips into battery holder on bottom of circuit board to run clock and holds static RAM contents when power is off. Lasts for at least 10 years when power is off. Battery does not discharge when power is on.

Serial Flash

None or 1 MB, Used to support flash file system and useful for serving web pages.
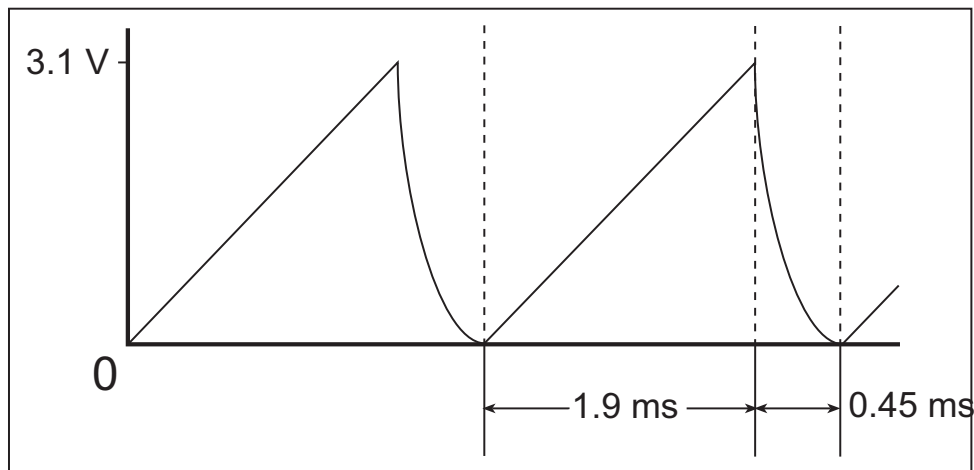
Analog Ramp Generator

Figure 15: Ramp Generator Waveform

The optional precision ramp generator generates a continuous sawtooth waveform with a precision rising ramp. The calibration of the ramp is tied to an on-board voltage reference. The ramp has a rise time of approximately 2 ms and a linearity of approximately 0.1%. The ramp starts at a slight negative voltage (-50 mV), and the high point is at approximately 3.1 V. The circuit is for A/D conversion as shown in Figure 5. The output from the comparator is routed to the Rabbit input capture via a digital multiplexer that allows one input channel at a time to be measured. The counter in the Rabbit starts at the beginning of the ramp and stops when the ramp crosses the voltage level of the input. Full scale is approximately 4095 counts giving a measurement resolution of 12 bits. The end-of-ramp input drives an interrupt in the Rabbit, which enters a routine to retrieve the count and store it so that it is accessible to the user program. Generally, all channels are measured successively and continuously. Out-of-range signals are also detected by the interrupt routine.

Typically, LM339 comparators, which normally come 4 to a package costing 10 cents or less, are used. These devices have protected inputs and can withstand overvoltages of ± 30 V if protected by a series resistor. The noise filter on the ramp has a time constant of about 15 µs and has the effect of slightly delaying the ramp and removing any digital noise picked up in the ramp signal as it runs around the user's motherboard.

With this A/D feature, the user can easily implement connections to many types of sensors. The +3.45 V power supply voltage from the PowerCore FLEX is well regulated and calibrated and can be used to provide excitation voltages for resistive sensors. The outstanding features of this A/D converter are electrical ruggedness, good repeatability and precision, and extreme low cost per additional channel. Reference designs are provided for a variety of uses.

AC Zero-Crossover Detection

AC zero-crossover detection can be used to control the switching of AC circuits with triacs. The crossover-detection circuit detects an AC voltage crossing 0 V. The circuit normally works with the center-tapped and half-wave rectified AC power-supply configurations.

The AC crossover interrupt in the PowerCore module, shown in the figure to the right, allows you to turn on a triac output so that it is synchronized with the AC waveform. An interrupt is sent to the microprocessor when the AC voltage crosses zero—this allows the software to turn on a triac at a precise time. The triac output is turned off automatically at the AC zero crossing.
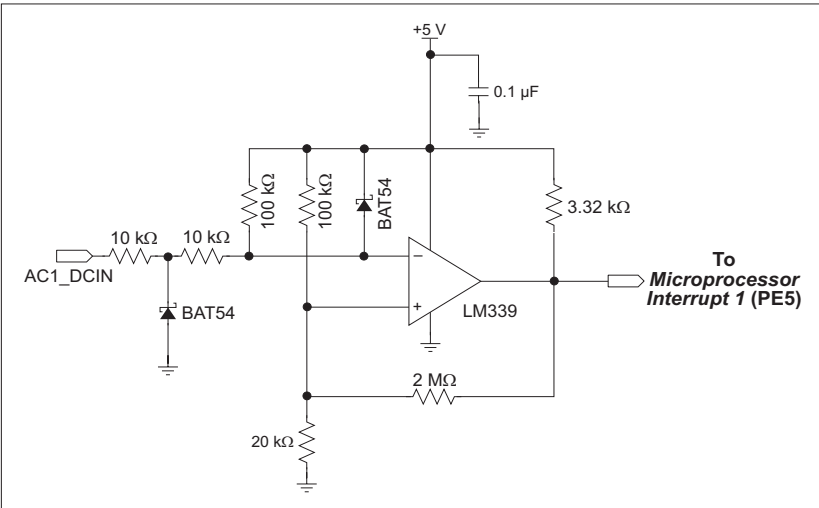
Figure 16: Zero-Crossing Detector Schematic

The software controls the input to external triacs, which may be used to turn on AC power to devices at a precise time (or phase) in the AC wave. Since the triacs turn themselves off automatically at each zero crossing, power can be applied just after a zero crossing for full power to the AC load, or most of the way between zero crossings for minimum power to the AC load, or anywhere else the wave phase.

10/100-Compatible Ethernet

Ethernet network connection is supported by extensive software suite. The 10/100-compatible Ethernet circuit contains a 10Base-T interface that functions in networked environments containing 10/100 auto-sensing hubs or switches.

Development Kit

Jumpstart your evaluation and design efforts with a complete Development Kit. The Development Kit includes a PowerCore FLEX module, a prototyping board, a serial cable for programming and debugging, Dynamic C with royalty-free TCP/IP stack and source, Getting Started instructions, AC transformer, and miscellaneous parts and connectors. Please be advised that if any other configuration of PowerCore besides the PowerCore 3800 is chosen for use with the Starter Package/Tool Kit, certain sample programs provided will not be usable. For example, if a PowerCore with no serial flash is used with the Tool Kit, the sample program showcasing the FAT file system will not be usable. Similarly, the Ethernet sample program will not be usable if Ethernet capability is not present.

Selected Features on Pre-Configured PowerCores		
Features	PowerCore3800 P/N 101-1006	PowerCore3810 P/N 101-1007
Microprocessor	Rabbit 3000 @ 51.6 MHz	Rabbit 3000 @ 25.8 MHz
Ethernet	Yes	No
On-board Power Supply	2 A, 8–43 V DC, 24–60 V AC (with center-tapped transformer otherwise 12–36 V AC)	1 A, 8–40 V DC, 19–57 V AC (with center-tapped transformer otherwise 10–29 V AC)
Memory	512K Flash 1 MB SRAM (512K Code, 512K data) 1 MB Serial Flash	512K Flash 256K SRAM No Serial Flash
On-board Analog	Ramp Generator, AC Crossover Detection, Temperature Sensor	

On-Line FLEX Configurator Tool

PowerCores are configured using the On-Line FLEX Configurator Tool at **www.rabbitsemiconductor.com**. In addition to allowing easy selection of features, the Configurator Tool provides recommendations on configurations.

To configure a PowerCore to meet your needs, visit www.rabbitsemiconductor.com.

Configurable PowerCore Options	
On-Board Power Supply	None
	1 A, 9–40 V DC, 19–57 V AC
	2 A, 8–43 V DC, 24–60 V AC
Input Circuit	Full-Wave Center Tap,
	Full-Wave Bridge,
	Half-Wave Rectifier
Microprocessor Speed	25.8 MHz; 51.6 MHz
Fast SRAM	512K w/ 51.6 MHz
Primary Flash	512K
Secondary Flash	None, 512K
Battery-Backed SRAM	256K, 512K
Battery	None, Installed
Serial Data Flash	None, 1MB
Ethernet Options	None, Installed
Ramp Generator	None, Installed
AC Crossover Detection	None, Installed

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1/4/2005

In addition to the configurable features illustrated above, PowerCore FLEX modules have the following standard features.

PowerCore Standard Features	
General Purpose I/O	39 I/O
Additional Inputs	2 Startup Mode, RESET
Additional Outputs	STATUS, RESET
Auxiliary I/O Bus	8 data and 6 address lines (shared with general purpose I/O)
Serial Ports	Five 3.3 V CMOS-compatible • 5 configurable as asynchronous • 3 configurable as clocked serial (SPI), • 2 configurable HDLC • 1 configurable SDLC • 1 asynchronous serial port dedicated for programming
Serial Rate	Max. asynchronous baud rate = CLK/8
Slave Interface	Slave port permits use as master or intelligent peripheral with master controller
Real-Time Clock	Yes
Timers	Ten 8-bit timers (6 cascadable from the first) and one 10-bit timer with 2 match registers
Watchdog/Supervisor	Yes
AC/DC Voltage Outputs	AC/DC Input, 5 V (up to 1.8 A), 3.45 V (up to 550 mA)
Operating Temp.	–40° to +70°C
Humidity	5–95%, non-condensing
Core Module Interface	2 x 25 pin header (0.1" pitch)
Power Input Connector	6-pin, 3 mm polarized friction-lock
Board Size	4.00" x 2.35" x 1.08" (60 x 102 x 28 mm) (without wiring harness)

PowerCore FLEX^{TM} Option Selection Work Sheet

Power Supply

5V Regulator
- ☐ None Switching Regulator
- ☐ 1 Amp Switching Regulator *(Must Select an Input Circuit)*
- ☐ 2 Amp Switching Regulator *(Must Select an Input Circuit)*

Input Circuit

Power Supplied through 2X25 Connector
- ☐ **Option 1**
  External regulated 5 V, No top Friction-Lock Connector
- ☐ **Option 2**
  Unregulated DC, requires on-board switching regulator, No top Friction-Lock Connector

Power Supplied through 2X3 Friction-Lock Connector
- ☐ **Option 3**
  Unregulated AC or DC, requires on-board switching regulator, No Triac Support, Full-wave bridge rectifier.
- ☐ **Option 4**
  AC Input, requires on-board switching regulator, triac Support, AC Center-tapped. *Includes AC Zero-Crossing detection.*
- ☐ **Option 5**
  AC Input (non center-tapped), requires on-board switching regulator, Triac Support, Half-wave rectifier. *Includes AC Zero-Crossing detection.*

Clock Speed

☐ 25.8 MHz (*No Fast SRAM*)	☐ 51.6 MHz (*includes 512K Fast SRAM*)

Analog Features

Ramp Generator

☐ Not Installed	☐ Installed

Memory

Primary Flash	**Secondary Flash**	
☐ 512K	☐ None	☐ 512K

Serial Data Flash	
☐ None	☐ 1MB *Recommended with Ethernet*

Battery-Backed SRAM	**Battery Installation** (*Recommended*) *(Must be installed with Serial Data Flash)*
☐ 256K	☐ None
☐ 512K	☐ Installed

Ethernet

Ethernet

☐ None	☐ 10/100 Compatible

Please use this work sheet to help guide you with your selection on the On-Line Configuration Tool.

www.rabbitsemiconductor.com

Mouser Electronics

Authorized Distributor

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  [101-0956](#)