INTELIGENT I/O
EXPANSION CHIP

RABBIT RIO®

The Rabbit RIO chip is an intelligent I/O processor ideally equipped for industrial automation and control

The Rabbit RIO chip offers both I/O expansion and peripheral features that easily integrate into new or existing designs. It interfaces to any microcontroller with an available SPI or parallel port. Multiple peripheral features offer a distinct advantage for motor control applications. The Rabbit RIO simply takes the load off the processor, making it ideal for applications with demanding networking requirements.

The Rabbit RIO is also ideal for machine control applications. I/Os are 5V tolerant, which also includes pin-pair protection for applications such as H-bridge drivers. Since multiple status bits are set from a single match register, pins are easily configurable for higher drive current operations. The same signal could be output on multiple pins for applications that require a higher current. It also provides push pull protection for sink and source drivers.

BENEFITS

- Easily interface to any CPU via an available SPI or parallel port
- Instantly add up to 32 digital I/O lines
- 8 independent functional channels with 4 ports each
- Functional channels configurable as: Bi-directional I/O, PWM or PPM outputs, TRIAC signal generators, input capture, counter, Quadrature decode peripheral
- Add I/O and peripheral features to any new or existing design
- Use multiple Rabbit RIO devices for large I/O requirements

RELATED PRODUCTS

Rabbit® SBC BL2100 Series

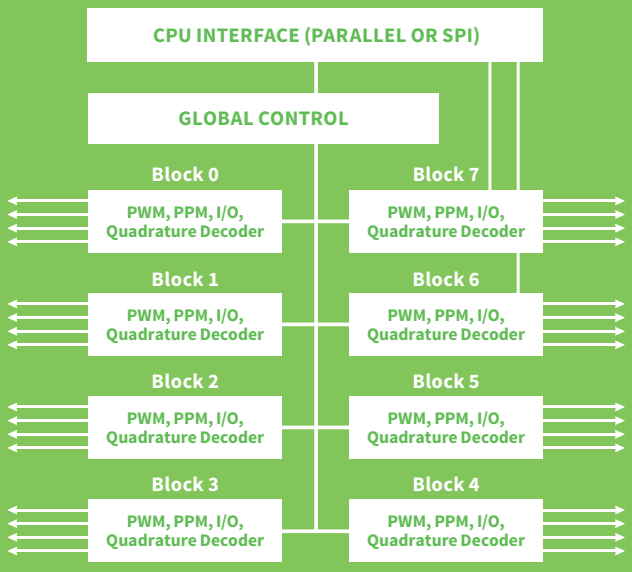
Rabbit® SBC BL4S100 Series

Rabbit® SBC BL4S200 Series

RabbitCore® RCM3000 Series

Dynamic C®

APPLICATION EXAMPLE



SPECIFICATIONS

Rabbit RIO® Expansion Chip

FEATURES	
CLOCK SPEED	Up to 40 MHz
OPERATING VOLTAGE	3.0-3.6VDC
MAXIMUM I/O INPUT VOLTAGE	5.0VDC (3.3VDC typ.)
CORE CURRENT	22 MHz @ 31.3 mA, 25° C
I/O RING	22 MHz @ 1.1 mA, 25° C
OUTPUT DRIVE	8 mA
CPU INTERFACES	SPI or 8-bit parallel
FIXED DIGITAL INPUTS	4
CONFIGURABLE I/O	8 independent channels, each with 4 ports: • Up to 32 bi-directional I/O lines • Up to 32 PWM outputs • Up to 16 PPM outputs • Up to 32 TRIAC signal generators • Up to 8 input capture peripherals • Up to 8 counters • Up to 8 quadrature decode peripherals
PACKAGE TYPE	64-pin TQFP 10 mm x 10 mm x 1.4 mm

RIO PROGRAMMABLE I/O APPLICATION KIT

APPLICATION KIT CONTENTS:

- RCM4110 module
- Rabbit RIO Prototyping Board
- Universal AC adapter, 12 V DC, 1 A.*
- 10-pin header to DB9 programming cable with integrated level-matching circuitry
- Plastic and metal standoffs with 4-40 screws
- A bag of jumpers and jumper wires for use on the Prototyping Board
- Rabbit® 4000 Processor Easy Reference poster

*Included only with Application Kits sold for the North American market. A header plug leading to bare leads is provided to allow overseas users to connect their own power supply with a DC output of 8–30 V.

PART NUMBERS	DESCRIPTION
101-1147	Rabbit RIO® Programmable I/O Application Kit
20-668-0030	Rio I/O chip
20-101-1187	Rio I/O chip (2 pack)

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