Rabbit RIO®

Inteligent I/O Expansion Chip

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

RABBIT RIO™
AT56467-UL17
5J5760A1
0633 KOREA

Overview

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.
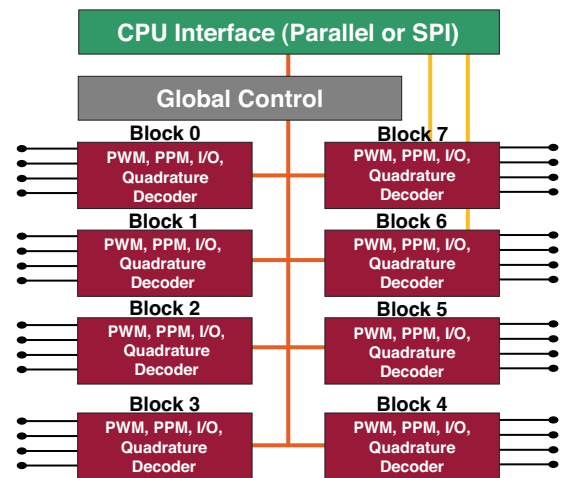
Block Diagram

CPU Interface (Parallel or SPI)

Global Control

Block 0	Block 7
PWM, PPM, I/O, Quadrature Decoder	PWM, PPM, I/O, Quadrature Decoder

Block 1	Block 6
PWM, PPM, I/O, Quadrature Decoder	PWM, PPM, I/O, Quadrature Decoder

Block 2	Block 5
PWM, PPM, I/O, Quadrature Decoder	PWM, PPM, I/O, Quadrature Decoder

Block 3	Block 4
PWM, PPM, I/O, Quadrature Decoder	PWM, PPM, I/O, Quadrature Decoder

Ideal Applications : Industrial control and automation, instrumentation, motion control

Features/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**

Application Kit

This low-cost application kit includes everything you need to begin development

RIO Programmable I/O Kit

Dynamic C

$299

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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

Pricing	
Price (qty. 1/1K/10K) Part Number	$5.00 / $3.75 / $3.00 20-668-0030
Price (2-Pack) Part Number	$10 20-101-1187

Visit www.digi.com for part numbers.

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