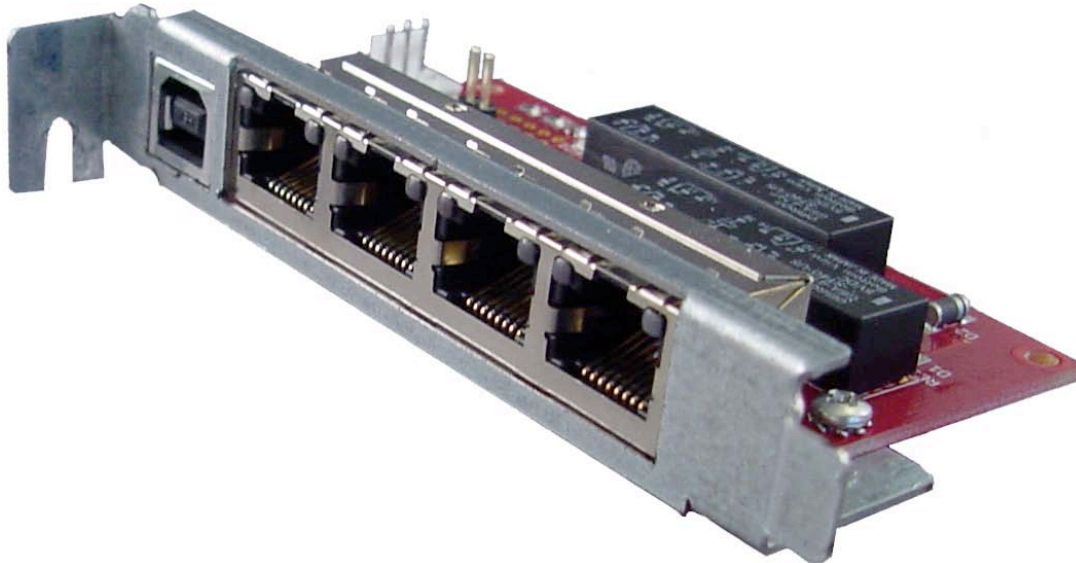# Single Port, Single PCI Slot, USB RJ11, RJ45 and RJ48 Failover

Providing reliable, flexible, and leading-edge solutions for a demanding telecommunications industry, including the Asterisk* community.

Managing your open source telecommunication needs has never been easier than with Rhino products. The Rhino single port failover card provides a reliable method of positively managing analog or digital telephony sources (port 1) with one of two possible destinations; the normal operating destination (port 3), or the failover or redundant destination (port 4). In addition, a 2-wire connection to the PC motherboard allows for a watchdog reset of the PC at the failover event.

The Rhino single port analog and digital failover is a self-contained, actively controlled, redundant switch with one input and two outputs (A-B). The failover card utilizes a powerful microcontroller that selects one of the two outputs depending on the condition of the main Asterisk server. The failover uses a loadable Asterisk module (.so) which communicates with the microcontroller by regularly sending an "OK" (watchdog) signal when Asterisk is running. When that "OK" is not received, normally when Asterisk fails, the microcontroller automatically switches ports to the failover device after a user defined duration. In addition, when power fails (USB power) the card automatically switches to the failover port.
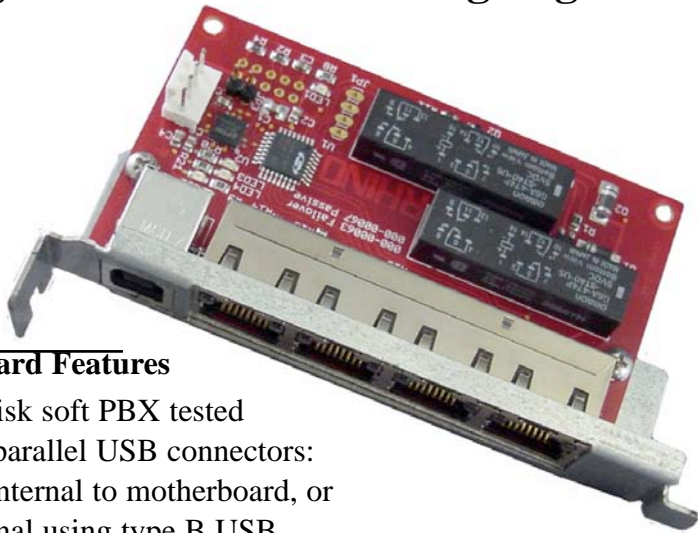
In analog mode, the Rhino single port failover allows for the connection of one, two or three telco FXO lines (6 wires in an RJ11, or four lines in a RJ45 if specially terminated) between Rhino FXO ports and single line telephones. In the case of failure, the Rhino single port failover will connect FXO lines to the single line telephones, allowing for both incoming and outgoing calls to be handled on the single line telephones until the server can be brought back on-line.

In digital mode, either an Ethernet or a T1/E1/J1 line can be switched, since all eight wires are routed straight through on the failover card to either the A or B port. In addition, in T1/E1/J1 mode, port 2 of the failover card is designed to be used with digital monitoring systems, with wires 1-2 and 4-5 connected from port 1 to port 2 through four 470 ohm resistors.

Rhino designed products are tough. In case of trouble, our technical support staff is ready to give you the support you need. Our 5-year, limited warranty means that you can be confident that Rhino will always work hard in your Open Source Telephony application.

* Asterisk is a registered trademark of Digium

Rhino Equipment Corp.
Single Port PCI Slot Analog-Digital Failover

RHINO®

Why Rhino?

Stop paying high prices when all you want is a product that works, from a company that believes that your success is our success.

All Rhino products are designed and manufactured in the USA by Rhino engineering and manufacturing staff. Using Rhino products guarantees that you are getting the lowest price while receiving the highest performance.

Rhino Equipment Corp. is a leading supplier of highly flexible and reliable products that satisfy all T1, E1 and analog needs for Open Source Telephony projects.

Our products will beat your expectations, or your money back - guaranteed. Our limited 5-year warranty means that you do not have to worry about your investment while it is in use - we do that for you.

Remember that our technical support staff will not go home at 5PM and tell you to call back tomorrow!

Standard Features

- Asterisk soft PBX tested
- Two parallel USB connectors: one internal to motherboard, or external using type B USB female connector
- Two pin header can be programmed to reset PC on failover event
- One input (port 1) - RJ11, RJ45 or RJ48 (all 8 wires passed to all ports) switched to either the A (normal, port 3) or B (failover, port 4) position
- One T1/E1 digital passive monitor port (port 2) that connects pins 1-2 and 3-4 from the input port (port 1), to port 2 through four series 470 ohm resistors
- For FXO-FXS channels, one, two, three (or four using a RJ45) lines can be switched using all 6 wires in a RJ11
- Software programmable watchdog timer allows for setting the max time between watchdog pings from the server
- Fits into a single PCI slot at the chassis, no PCI electrical bus connection needed

Physical Description

- Single 4-port RJ11, RJ45 or RJ48 female connector
- Two pin male header to connect to PC motherboard reset pins
- Powerful microcontroller controlled
- User selectable switch to override the microcontroller, operates as a USB power monitor
- Sits in a single PCI card slot
- Uses one USB port
- Two status LEDs per port, red and green

Specifications

- USB powered and controlled
- Consumes less than 1/2W of power from the USB port
- Includes a 4-wire cable to connect to motherboard USB header and a 2-wire cable to connect to the PC motherboard reset pins
- 3.50" tall, 2.00" wide, PCI bracket included
- Operating Temperature: 32–122°F (0–50°C); Humidity: 5–90%, non-condensing
- 5-year limited warranty

RJ48, RJ45, RJ11
T1/E1, Ethernet, Analog
External USB
Input
T1/E1 Monitor
Main Port
Redundant Port
Main Server
Redundant Server