

CUSTOMER *Spotlight*

Relio™ Custom Computing Solutions Public Security Systems

Overview

A manufacturer of security systems for public facilities required a 2U rackmount computer with a large amount of I/O to interface a variety of motors and sensors. The new system based on the Relio™ platform replaces a PLC and several discrete I/O modules. The design results in more flexible programming capabilities and lower cost while maintaining the reliability that is crucial to the system.

Application Requirements

The customer required a 2U, 19" rackmount platform that provided:

- ▶▶ Dual 10/100BaseT Ethernet
- ▶▶ Four RS-232/422/485 ports
- ▶▶ 32 optically isolated inputs
- ▶▶ 32 Reed relay outputs
- ▶▶ LED status indicators for digital inputs/outputs
- ▶▶ Eight 12-bit A/D channels
- ▶▶ Optional Profibus or ControlNet connectivity
- ▶▶ Integrated CD-R/W drive

For compatibility with field wiring, the removable screw terminals for the DIO were specified to be 12 AWG. To best facilitate the Linux Fedora software environment the customer preferred, the system runs from a 2.5" hard drive.

The Sealevel Solution

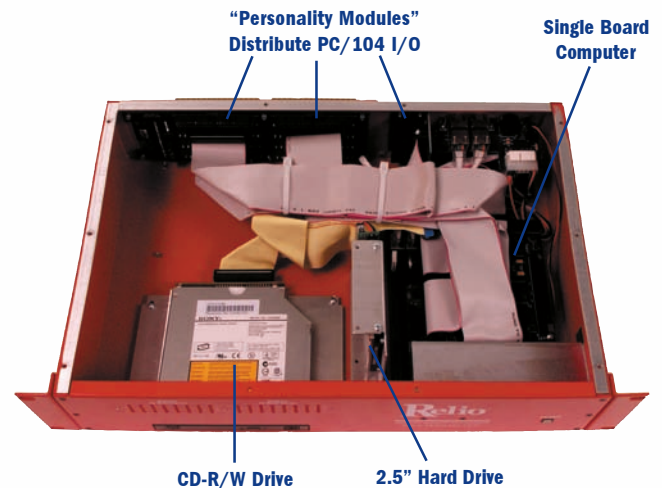
Sealevel designed a custom rackmount chassis in the required 2U, 19" form factor that accommodates three PC/104 expansion modules that provide the digital, analog, and fieldbus I/O. A single board computer with a fanless 933MHz Low Voltage PIII CPU powers the system. All I/O connectors are brought out to the rear of the chassis and 12-24 AWG removable terminal block connectors allow easy wiring of the DIO signals. A CD-R/W drive is accessible from the front of the system. To customize the appearance, the front of the computer is silkscreened with the customer's name and logo (not shown).

Key Design Challenge:

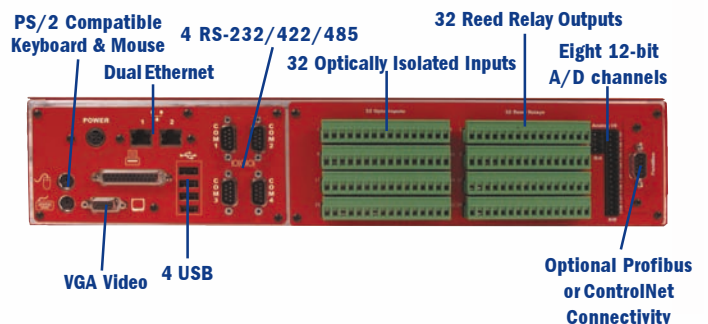
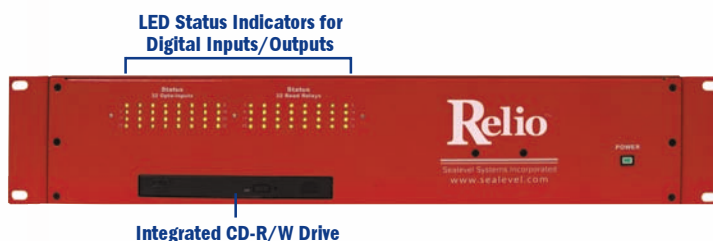
Discrete I/O With Status Display

The requirement for 32 optically isolated inputs and 32 Reed relay outputs with external LED status display functionality required the design of a custom PC/104-compatible board. In addition to the input and output circuitry, the board includes a custom FPGA circuit to continuously monitor the inputs and outputs and updates the LED module mounted in the front of the enclosure to provide real-time status information.

Relio Electronics with Integrated I/O



Relio Front and Rear Panels



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