KDY
Automation Solutions, Inc.

Custom solutions for process automation.
Serving research & development,
pilot production,
and industrial customers.

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Ion Implanter- Reverse Engineered

- Custom, hot-swappable fiber optics communication
- Full library of serial commands allowed replacement of proprietary communications module
- National Instruments CRIO utilized for fast and robust communication
- Automated equipment tuning procedure
- Recipe-driven automated control
- Mass spectrum analysis tools

Overview

A global leader in developing specialized process advances in manufacturing operations asked KDY to reverse engineer the communications protocol of an existing ion implanter, and to develop a new, custom control interface. KDY's solutions made use of the customer's existing fixtures and test instruments, greatly reducing cost.
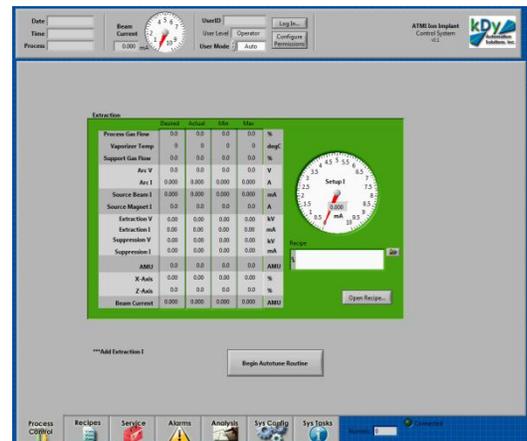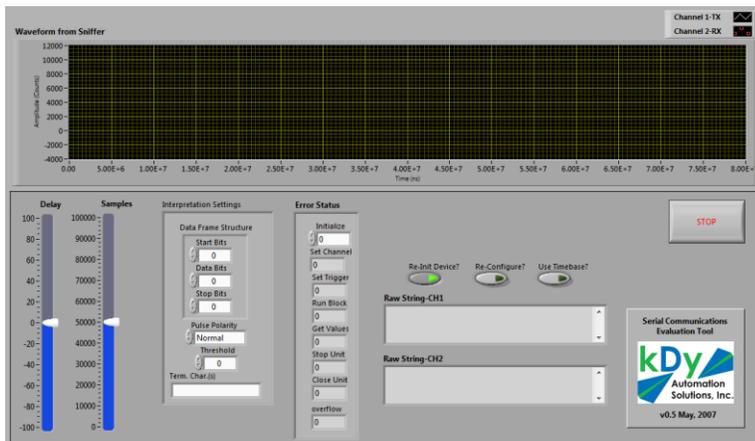
Reverse Engineering Process

KDY started this project completely blind. All existing software and hardware were proprietary, and the manufacturer refused to provide any documentation. Designing a custom fiber-optic communications sniffer and very clever programming, KDY engineers were able to reverse-engineer all a complete communications protocol between the control PC and the ion implant equipment.

User Software

The software delivered by KDY integrated the complete library of serial device commands into a user-friendly, powerful package. Including alarm management, auto-tuning procedures, recipe-driven equipment control, and spectral data analysis, KDY's software provided a clear upgrade from the existing locked control suite.