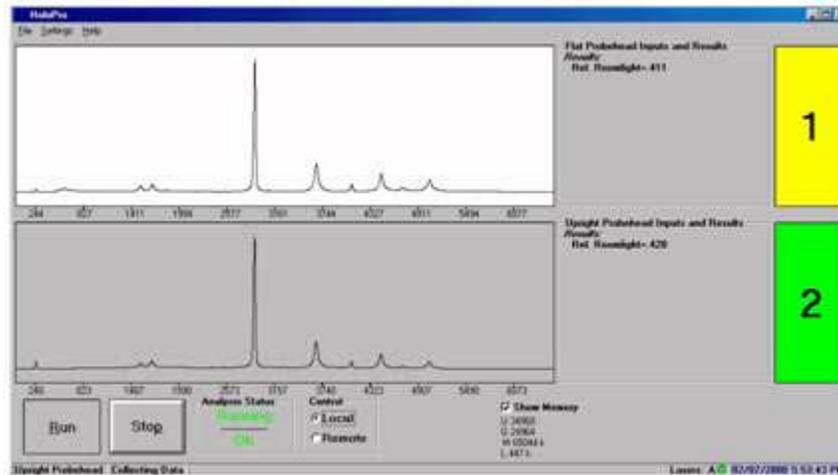


HoloPro



Kaiser developed its HoloPro™ software package to allow coordination of data collection from its process Raman analyzers and to allow communication between a plant's distributed control system (DCS) and the sampling point.

HoloPro's data management features include user-defined sequencing of data acquisition of up to four different sampling locations (for multi-channel compatible analyzers), as well as spectral data archiving with auto-purging to prevent hard drive overflow. The data can be auto-exported to several third-party data analysis software packages for detailed component analysis. The results of this analysis may then be displayed on the screen, logged to an ASCII text file and/or sent to the process DCS. The ability to export to one of the many user-defined third party data analysis software packages allows companies to choose a package rather than learn another vendor specific package. This flexibility allows the end-user company to maximize productivity and minimize training costs for their scientists, engineers, and technicians.

Bi-directional communication with the DCS is possible through several protocols including ModBus (analog and discrete I/O) and OPC. 4–20 mA analog inputs and outputs are also supported for select **RAMANRXN™** analyzer using either Optomux RS232 or internal PC cards. In addition, direct inputs from temperature and pressure sensors can utilize Optomux RS232, 4–20 mA current loop, or TCP/IP protocol.

Other HoloPro™ features include password protection, and extensive error and alarm protections (e.g., loss of signal, analysis error). Any such errors are logged and displayed locally, as well as being automatically sent to the DCS.

Scripting Language

HoloPro's versatility is enhanced by a scripting language for custom control parameters. The scripting option permits the process engineer to read output and write input for the analog and digital I/O devices. Thus, the engineer can control system components like switches, valves and solenoids, and develop routines that respond to conditions in the reactor. For example, HoloPro™ can be instructed to stop the acquisition when the sample temperature or the product concentration (as measured by the intensity of a characteristic Raman band) reaches a given value.

Entering the scripted program is simple; the user simply types the commands into a standard ASCII text editor (such as Microsoft® Notepad) and saves the file. HoloPro™ contains a function that allows it to access a scripted program from a hard drive, CD or any other ROM device. The commands are entered in the VBScript language along with a set of HoloPro™-specific shared commands. The shared commands are



relatively straight forward, consisting of the prefix sh (for "shared") followed by a simple command name. For example, the command to acquire a spectrum is simply shAcquireSpectrum. VBScript inherently supports looping commands such as "For ... Next, and Do While ... Loop."

The scripting option provides the process engineer significant tools when designing a robust process control protocol and makes HoloPro™ versatile enough for even complex applications.

Communications Protocols

- Modbus: RS-232 or TCP/IP DCS interface
- OPC: Twisted pair or fiber optic DCS interface
- 4-20 mA

Scripting Language

- Custom control parameters for switches, valves, solenoids, and other process line components
- Standard ASCII text editor compatible
- Program in VBScript instead of a proprietary language

Analyzer Compatibility

- Compatible with **RAMANRXN1™**, **RAMANRXN3L™**, and **RAMANRXN3™** and **PhAT System** analyzers
- Data collection for up to four sampling points with the **RAMANRXN3L™**, and **RAMANRXN3™** compatible multi-channel analyzer