

## I-SPY SERIAL COMMUNICATIONS ANALYZER . . .

*Compact, High Performance I-Spy Now Supports any COM Port in Windows*

### IN THIS ISSUE



- I-Spy32 Provides Advanced Debugging
- Water SCADA for the Town of Philipsburg
- Stay Tuned
- Next Issue

What can troubleshoot communications between devices, save diagnostic data, and can almost fit in your back pocket? It's the new and improved I-Spy32 Serial Communications Analyzer (for Windows®).



The I-Spy Serial Communications Analyzer has been a customer favorite for finding out what is going on between two computer-based devices. The I-Spy32 is the next generation Windows version of the popular I-Spy. I-Spy32 expands your debugging capabilities, gives you more options, more features, more diagnostics tools, and can use filters. If you need to find out what is really going on, I-Spy32 is the tool for you. And now it supports any COM port available in Windows.

With the I-Spy32 you can monitor data easily and pinpoint communication troubles faster, which means you can be up and running faster. And you can save the communication messages for later review or archive. All this with some software and a little device that fits in your hand.

### What is the I-Spy32

I-Spy32 is a package that contains everything you need to monitor and troubleshoot communications between devices: hardware, software, cables, hood connectors, and instructions. The I-Spy32 is an analyzer software package or program, and the I-Spy box is a compact unit that allows you to easily connect the two devices and control the incoming and outgoing communications. Working together, the I-Spy box and the I-Spy32 software give you powerful debugging and diagnostic tools.

*The I-Spy32 now supports any COM port available in Windows*

### What's New in the I-Spy32

The new I-Spy32 has many new features including the following:

*Continued on page 2* ►



The I-Spy32. All you need to analyze and debug communications - and it fits in your hand.

### Integration News

Here at Tetragenics we sell advanced, cost-effective systems that provide solutions to our customer's individual situations. But what if one of those situations means that you are locked into using specific equipment because of preexisting systems, protocols, controls, or instrumentation. Well, MSE Tetragenics also

provides experienced integration services. We have been providing control systems for over 30 years. We use that experience to not only give you high-quality Tetragenics products, but also to find a solution to your situation, even if that solution involves integrating non-Tetragenics products. Read about one SCADA integration project for the Town of Philipsburg --- page 3.

# I-Spy32

## Serial Communications Analyzer

Continued from page 1...

- A new software interface
- Ability to use filters (see below)
- Runs in 32 bit Microsoft Windows
- Can use any COM Port available to Windows (Not just COM1 & COM2)
- Supports DLL based Protocol Filters. (DOS version does not have protocol filters)
- Allows you to configure colors and settings. (DOS version has limited configuration)
- Lets you enable and disable monitor mode within the software

### Filter Feature

The new I-Spy32 can use filters (Modbus and DNP 3.0 filters are currently available). These add-on modules allow you to not only see the protocol being monitored, but see it broken into readable details.

For example, the Modbus filter breaks out the data stream into the station, function code, range, and data being sent. The filter appears on the screen as a floating window and updates as it receives the raw data. The window allows you to control the filter. You can stop the data stream and scroll through the accumulated data. The main data window and the filter window are synchronized so you have immediate access to the raw and filtered data.

You can even write your own filter using an available tool kit.

### How it Works

To use the I-Spy32, connect the I-Spy box to two devices and then view and analyze the RS-232 serial messages passed between them with the click of a

button. By reviewing and analyzing the messages displayed on the screen you can detect problems and troubleshoot the devices. The data appears on the screen in different colors (user-selectable) so you can analyze it quickly. Toggle switches on the I-Spy box allow you to swap the transmit and receive lines going to the I-Spy box. The I-Spy32 lets you

- search the data

### Monitoring Communications

The I-Spy32 intercepts serial communications. Messages from each connected device appear in different colors that you can change. I-Spy32 keeps track of all the communications messages and activities going on between the connected devices.

### Viewing the Data

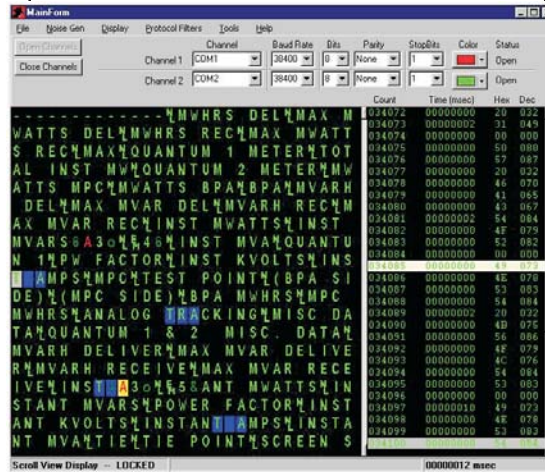
As the two connected devices talk to each other, the messages are captured and displayed on the screen. At any time, you can lock the scrolling to view details on selected messages - the messages continue to be collected in the background.

### Analyze Data

If you know the message pattern or sequence (or even part of it) that may be causing the problem, I-Spy32 will search for that pattern and stop and highlight it when it finds it (trigger on that event).

If you have different devices to test and don't have time to analyze a particular set of messages, the I-Spy32 lets you save the messages to view later in the program, or export them in an ASCII format so you can view them in any text editor.

For debugging and diagnostic troubleshooting, you can't beat the I-Spy32. Check it out. □



### I-Spy32 Screen Shot

- analyze serial data in a readable format
- view data in different colors
- view data being transmitted in real time
- verify timing on duplex protocols
- store data on a disk for later analysis
- change the baud rate
- stop the display at specific sequences
- scroll up and down through the messages
- trigger on an event (analyze the data before or after the event)
- swap the transmit and receive lines with easy toggle switches
- lock (stop) incoming messages so you can review, store, or save them

### TETRA VIEWS

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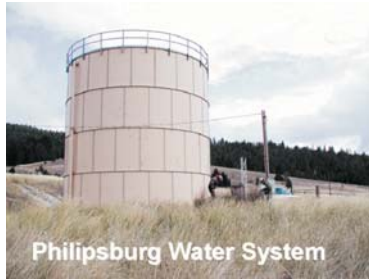
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# Integration News

## I&C INTEGRATION - SCADA WATER SYSTEM - TOWN OF PHILIPSBURG

**Philipsburg, Montana.** MSE Instrumentation and Control (I&C) department upgraded the existing Supervisory Control and Data Acquisition (SCADA) system for the Town of Philipsburg's water distribution system. Taking into consideration the existing system and contract requirements specifying certain equipment, our I&C people integrated new and existing equipment into a working system. The new system consists of five Programmable Logic Controller units (one master and four slave units) and a Human Machine Interface (HMI) computer.



### Situation:

Even though the Town of Philipsburg had pristine water quality, tests determined that the water was a little aggressive on customers' copper piping with lead soldered connections. The town also had to meet Environmental Protection Agency (EPA) regulations. They developed a new system to augment the town's existing surface water supply with water from a nearby spring water bottling plant, and designed and installed a new pumping station. Now they had to put it all together and make it work.

### The Integrated System:

For the new system, our I&C department provided the control design that included programming, control panel fabrication, instrumentation selection, installation, and system startup. The new system was installed at the pumping station.

The project also required upgrading the town's existing, obsolete SCADA system according to contract requirements. The old system included two water storage reser-

voirs, a chlorinator, a PRV (pressure reducing valve), and the main control monitoring station located at the town water shop. We integrated and programmed the new system with the existing subsystems using advanced operating control strategies.

**Master and Slave Units:** In the new system, the master unit, located at the town shop, polls the other slave units and sends the data to the HMI.

The four slave units monitor their individual sites according to preset levels and parameters and transmit their data to the master unit. Some slave units can perform control adjustments if a level reaches a specified set point.

The slave units are located in different areas and monitor various levels.

- A water storage tank and chlorinator unit controls the tank level and monitors key water parameters such as turbidity, pH, temperature, chlorine residuals, and overflow levels.

- A metal water tank unit monitors the water level in the water tank.

- A pressure reducing valve unit monitors and controls the water system distribution pressures according to specified set points. This unit also contains a time schedule program to make sure that both water tanks get equal usage during the winter months to reduce maintenance and wear on the tanks.

- A booster pump station unit controls the pumping of water from the booster pump station to the water storage tank and chlorinator. The water from the pumping station augments the surface water going into the water storage tank and chlorinator. The unit also controls and monitors the chlorine residuals and pump station flows.

**Operator Interface:** The master unit sends the data to the system HMI. The HMI pro-

cesses the data according to set parameters and displays the information according to the type of data and alarm status. Operators monitor system parameters and archive and trend data (using integrated, off-the-shelf software). The HMI also acts as a callout dialer when it receives failure or alarm information from the units. When it receives an alarm, the system alerts an operator locally, or dials a preset number to alert on-call personnel that there is a problem.



System HMI

**Alarm Capabilities:** The system displays reports and announces alarms through a telephony card and a standard telephone line connected to the HMI PC. The alarms are time stamped when they come in, when they are acknowledged, and when they cleared. Operators can retrieve reports or acknowledge alarms remotely (over the telephone line).

We also created a schedule of alarm notification destinations. The system notifies the operators as specified within the schedule. The system tries to reach the operator on call. If that operator doesn't respond to the alarm call, the system forwards the alarm messages to the next number, and so forth, until someone acknowledges the alarm.

The new pump station and control system was a complete success. Almost immediately after augmenting the spring water, favorable results were detected in water quality parameters measured using the new SCADA system.

*The Town of Philipsburg lies in Southwestern Montana Gold Country, in the heart of the spectacular Flint Creek Valley on the Pintler Scenic Route (Montana Highway 1). □*

## STAY TUNED



Stay tuned for details about two new additions to our team.



Watch for news on Tetragenics' upgrade path for VME-based Plant Control Systems.



More MC3000 protocols are under development, like SNMP (simple network management protocol) and DNP 3.0 Host.

## NEXT ISSUE



**Advanced Editors**  
Did you know that Tetragenics' System Database Editor (SDE) is a complete editing package for your Tetragenics control system. It is Windows based and lets you add RTUs or build your own screens. Next issue we will highlight the SDE Package.



**Integration**  
Our Instrument and Control people are busier than ever. Next issue we look at the SCADA system installed for the City of Pablo and how it automated their water control system and gave them added functionality.

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