



USER MANUAL

JEROME[®] COMMUNICATION SOFTWARE (JCS) INSTALLATION and OPERATION MANUAL

May 2009

ARIZONA INSTRUMENT LLC

3375 N Delaware Street | Chandler, AZ 85225 USA
800.528.7411 | 602.470.1414 | f 602.281.1745

www.azic.com

Email:

General - azi@azic.com

International - intl@azic.com

Customer Service - support@azic.com

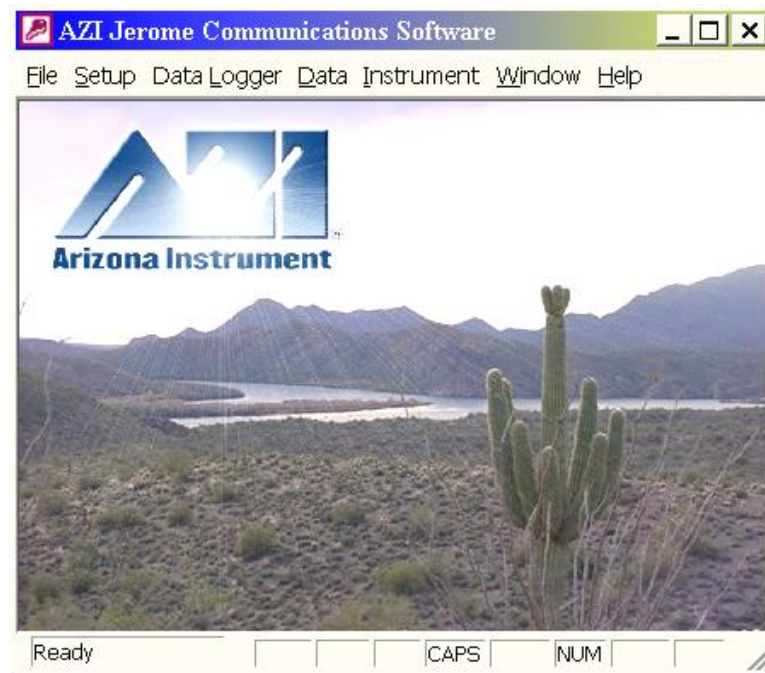
TABLE of CONTENTS

1.	INTRODUCTION	4
2.	SYSTEM REQUIREMENTS	5
3.	HARDWARE INSTALLATION	6
3.1.	Instrument to Computer - Direct Interface.....	6
3.2.	Instrument to Data Logger to Computer Connection	7
4.	SOFTWARE INSTALLATION	8
4.1.	Starting the Software.....	8
4.2.	Security Key.....	10
4.3.	Using the Software.....	10
4.4.	Program Revision Information	11
5.	JCS Menus	11
5.1.	File menu	11
5.2.	Setup menu.....	13
5.3.	Data Logger menu.....	14
5.4.	Data menu	16
5.5.	Instrument menu	19
5.6.	Window menu.....	21
5.7.	Help menu.....	21
6.	Operation.....	22
6.1.	Instrument operated from the computer.....	22
6.2.	Instrument operated from a Data Logger.....	23

Jerome[®] Communications Software (JCS)

To be used with:

Jerome[®] 431-X Mercury Vapor Analyzer with the Communications option and
Jerome[®] 631-X Hydrogen Sulfide Analyzer with the Communications option



PROPRIETARY RIGHTS NOTICE

The material in this manual contains valuable information developed by Arizona Instrument LLC for use with the Jerome[®] line of analyzers. No part of this manual can be reproduced or transmitted in any form or by any means, electronic, mechanical, or otherwise. This includes photocopying and recording or in connection with any information storage or retrieval system without the express written permission of Arizona Instrument LLC.

A current electronic copy of this manual can be found on the AZI website at:

www.azic.com/downloads.aspx

© Copyright 2000-2009, Arizona Instrument LLC. All Rights Reserved.

Windows[®] and Access[®] are registered trademarks of Microsoft Corporation in the United States and other countries.

1. INTRODUCTION

The Jerome[®] Communications Software (JCS) operates with the Jerome[®] 431-X Mercury Vapor and Jerome[®] 631-X Hydrogen Sulfide Analyzers that have the Communications option installed. The software can control instrument sampling for unattended continuous operation, collect data, graph this data in real time and perform statistical analysis.

The software can also program the Jerome[®] Data Logger, AZI P/N 6100-0010. This optional accessory enables data storage during manual sampling or portable automatic sampling, without being attached to a computer. The Data Logger initiates automatic sampling, triggers alarms and stores data. The logged data may then be downloaded to the computer when it is convenient.

The JCS software is menu-driven and easy to use. Each display screen is designed for clarity with self-explanatory menu options. Select menu options using either a mouse/pointing device or a standard keyboard. The user creates records, or files, for computer storage of collected data. Data is easily retrieved for later viewing, graphing, printing or editing with spreadsheet or word processing software (not provided). Data can be used for ongoing record keeping or for fulfilling local regulatory requirements.

Before using this software, familiarization with the operation of the Jerome[®] Hydrogen Sulfide Analyzer or Mercury Vapor Analyzer is important. Prior to installation of this software, familiarity with the personal computer and Windows[®] operating system being used is also recommended. If you have any questions about how to proceed, call AZI Customer Service at (800) 528-7411 or (602) 470-1414 or send an e-mail to support@azic.com for assistance.

2. SYSTEM REQUIREMENTS

Contents of the JCS Kit (AZI #Y990-0168)

Jerome® Communications Software (on CD-ROM)

USB Security Key

JCS (Instrument/Data Logger/PC) Interface Cable, AZI #6000-1055

This user's manual (also on the CD-ROM)

Files on the JCS Program CD-ROM

JCS installation program

JCS and instrument manuals current at the time the software shipped

System requirements, not included with the JCS Kit

Jerome® 431-X or 631-X with the Communications Option installed

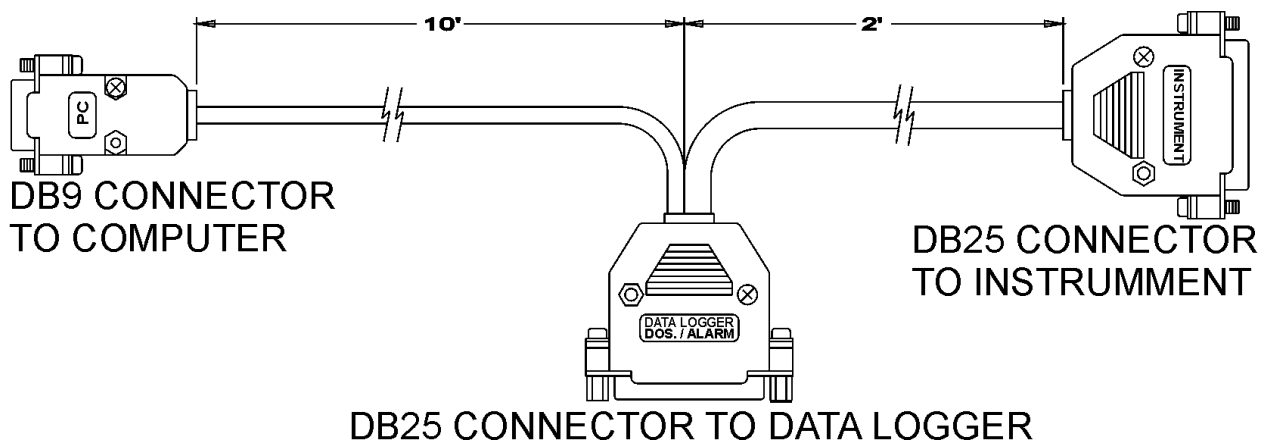
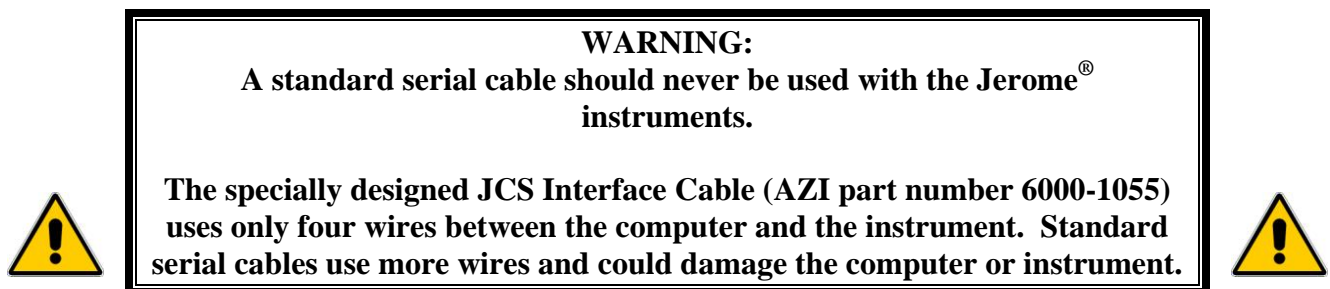
Windows® 98 Second Edition, Windows® ME, Windows® NT, Windows® 2000 or
Windows® XP

One available DB9/RS-232 serial port

One available USB port

Optional equipment:

Jerome® Data Logger, AZI P/N 6100-0010 (to capture data without a computer nearby)



JCS Interface Cable (AZI #6000-1055)

3. HARDWARE INSTALLATION

! Please Note: Only the JCS Interface Cable should be installed at this time. After the software is installed and operating, the security key will be installed in an available USB port. **!**

3.1. Instrument to Computer - Direct Interface

Use the direct interface configuration when the Jerome[®] instrument is connected directly to a dedicated computer. The JCS allows the computer to control sampling, data storage and data analysis while connected directly to the instrument.

! Please Note: This configuration will not operate if the Data Logger is attached to the center connector of the JCS Interface Cable. **!**

- Ensure the computer and instrument are both turned OFF.
- Locate the DB25 connector marked “INSTRUMENT” on the JCS Interface Cable and attach it to the back of the instrument.
- Attach the DB9 connector on the other end of the cable (identified as “PC”) to an available serial port on the computer. This port will be identified to the JCS during program installation.
- The remaining DB25 connector on the cable must not be connected. It is used only during programming of the Data Logger. When it is connected, it will inhibit all communication between the instrument and computer.



DB25 Instrument Connector Installed in Analyzer

DB9 PC Connector Installed in Computer Serial Port

3.2. Instrument to Data Logger to Computer Connection

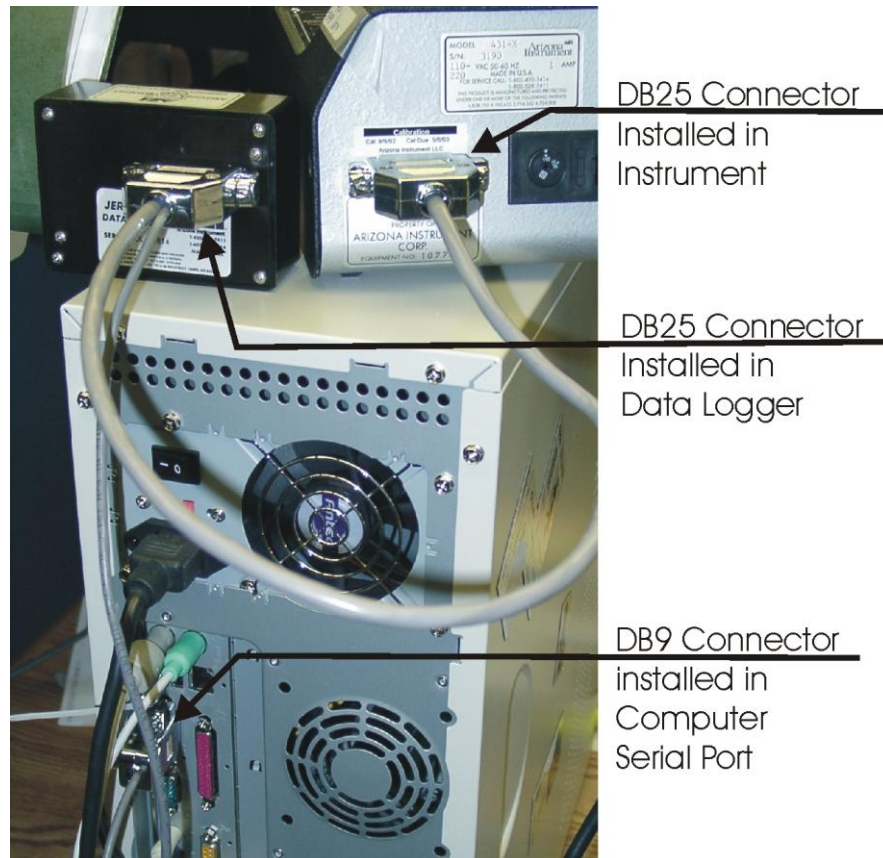
This configuration is used for Data Logger setup and configuration. After programming the Data Logger, disconnect the cables and attach the Data Logger directly to the instrument. The Data Logger can then control analyzer sampling, alarms and data storage. The Data Logger has a 1,000 sample data capacity. The Data Logger must be reconnected to the computer to download the data.



Please Note: The Data Logger will not operate if it is connected to the JCS Interface Cable. It must be connected directly to the instrument to receive power from the instrument and perform auto-sampling and data storage.



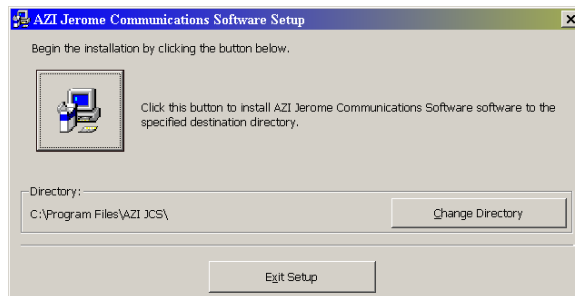
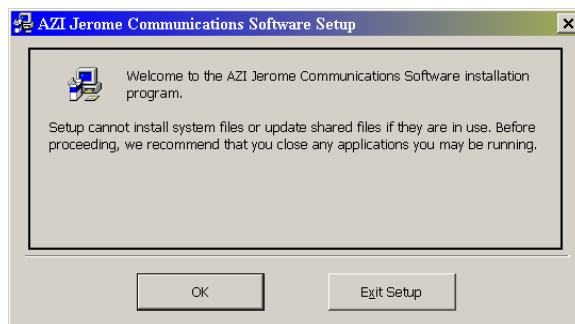
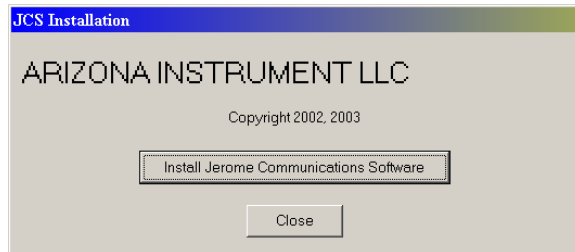
- Ensure the computer and instrument are both turned OFF.
- Locate the DB25 connector marked “INSTRUMENT” on the JCS Interface Cable and attach it to the back of the instrument.
- Attach the DB9 connector on the other end of the cable (identified as “PC”) to an available serial port on the computer. This port will be identified to the JCS during program installation.
- Connect the remaining DB25 connector, identified as “DATA LOGGER,” to the Data Logger. (This connector has two cables extending from it.)



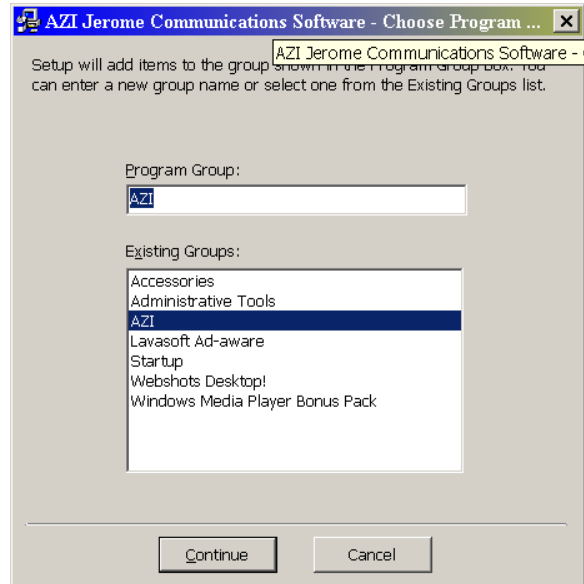
4. SOFTWARE INSTALLATION

4.1. Starting the Software

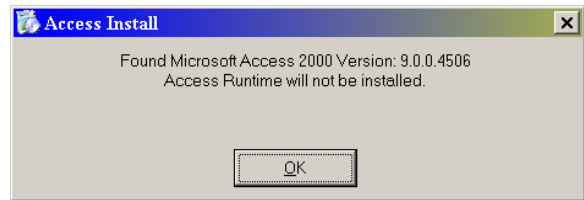
- Turn on your PC and place the JCS Software CD into the computer's CD drive. If the program fails to start:
 - Select Start and Run.
 - Enter E:\Install\JCS_Install.exe, where "E" is the letter identifying the CD drive, and select OK.
- Click on "Install Jerome Communications Software" to install the software or "Close" to abort the installation.
- Ensure all other running programs are closed before clicking on "OK," or click on "Exit Setup" to abort the installation.
- Click on "Change Directory" if you want the software to install in a different directory or folder than the default directory.
- Click on the picture button to install the software to the listed directory, or click on "Exit Setup" to abort the installation.



- Click on “Continue” to add the AZI Program Group and AZI icon to the computer’s Start Menu. If desired, type in a different program group or click on “Cancel” to prevent the addition of the AZI group to the Start Menu.
- The software may take several seconds to load, depending on the speed of your computer and disk drive.



- If Microsoft Access[®] 2000 database software SR1 or later is installed on your computer, no additional software will be installed by JCS. If Access[®] 2000 database software SR1 or later is not installed on your computer, then Access[®] Runtime will be installed. This screen will indicate what program was found and what action was taken.



NOTE: When installed on Windows[®] XP, Windows[®] 2000, or Windows[®] NT operating systems, the computer user must have read/write access to the "\\Program Files\AZI JCS" directory. See your network administrator or the operating system help files for assistance in setting rights.

The software may be loaded on as many computers as desired but will operate in a “demonstration” mode on all but one. The software will be fully functional on the one computer that has the “security key” installed in a USB port. The security key is installed after the software has been installed, as detailed in the next section.

4.2. Security Key

As soon as the JCS software installation is complete, insert the USB security key into an available USB port. The computer will automatically detect the key and install drivers that were copied into the computer during the JCS installation. The Data Logger and Instrument menu items are only available while the key is installed. The key can be moved from computer to computer. However, only the computer in which it is installed will be capable of full program operation.



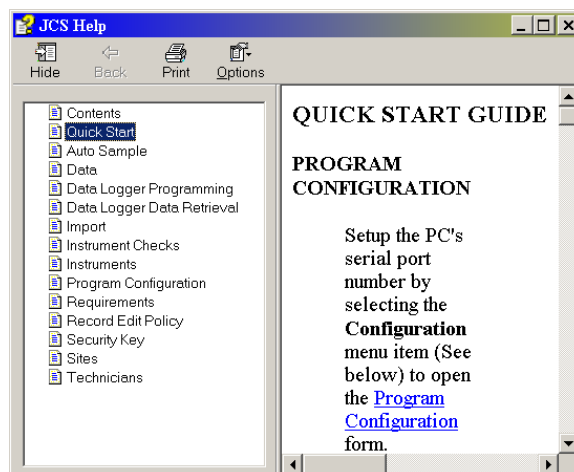
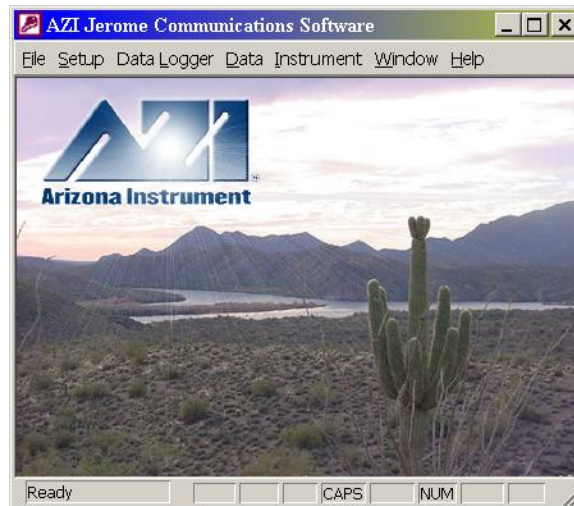
**Security Key
Installed in
USB Port**

Computers that have the software installed but no security key installed will operate in a demonstration mode only. No data can be transferred to or from the instrument but data previously stored in the computer may be viewed.

4.3. Using the Software

Click on Start→Programs (or All Programs)→AZI→JCS to launch JCS. The screen shown to the right appears, along with the help screen shown below. The JCS program operates according to Windows® conventions for menu driven programs. Selections are made with a mouse/pointing device or keyboard. Set the cursor on the desired selection and click to select the item. The Windows® keyboard “Alt,” arrow, “Tab” and “Enter” keys may also be used.

The Program Window has the typical drop-down menu bar across the top of the screen to access program options, commands and information.



4.4. Program Revision Information

Click on “Help” on the menu bar then click on “About.” The AZI logo appears and shows the program's title and version number. If you call AZI Customer Service for any reason, this version number will be needed to identify the software in use.



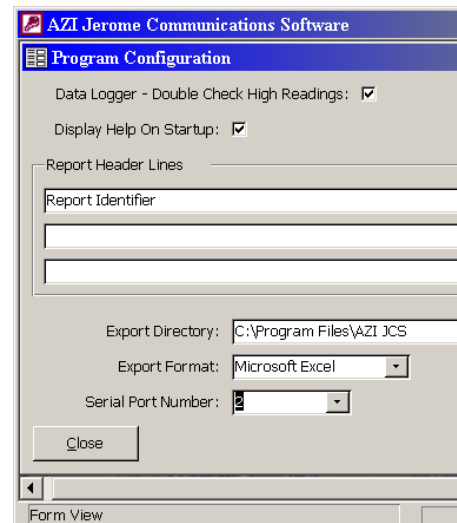
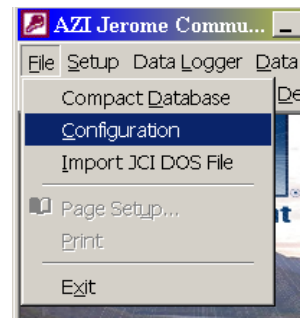
5. JCS Menus

5.1. File menu

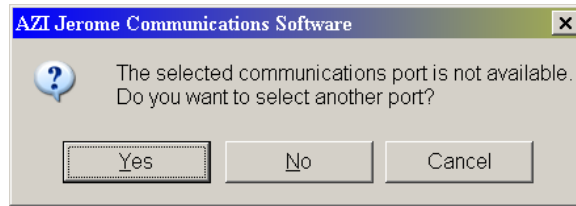
- **Compact Database** – clicking on this option compacts the database to take up less disk space, if desired.
- **Configuration** – Sets up the options shown below.
 - **Data Logger – Double Check High Readings** - Click on this check box if the Data Logger is to be programmed to take another sample immediately to verify a high reading.
 - **Display Help on Startup** – Check this box if you want

the Help file to be displayed each time the program is started. It is best to check this box until you are familiar with the functions you need to perform on a routine basis.

- **Report Header Lines** – Type the information you want to appear at the top of each printed report in these three lines. You do not have to use all of them.
- **Export Directory** – Enter the directory on the hard drive where you want data and reports stored. The default selection stores the data in the directory with the Jerome[®] Communication Software program.



- **Export Format** – Choose the output format that best suits your needs.
 - **HTML** - for web browser use,
 - **Microsoft Excel** - for spreadsheet use,
 - **RTF** - for general word processing use, and
 - **Text** - for notepad use.
- **Serial Port Number** - Select the computer's serial port number, usually 1 or 2. If the computer has a modem, serial port 3 or 4 may need to be selected.



- **Import DOS JCI File** – If there are files created by the DOS version of Jerome[®] Communication Interface software on the system, use this option to bring them into the current Windows[®]-based software.
- **Page Setup, Print, and Exit** – The last three selections under the File Menu are standard program options to control printing operations and exiting the program.

5.2. Setup menu

The JCS program uses Microsoft Access to store information. The data from the Data Logger is stored in records that are associated with site/location records, instrument records, and technician records. Before retrieving new data from the Data Logger, the site, instrument, and technician records must be set up.

- **Instrument Checks** – provides a place to enter the data from periodic checks of the instrument.
- **Site** – displays a form to enter site data. Enter the site name, address and sample location. Add all of the sites that are monitored. Each site must have at least one sample location specified and can have up to as many locations as are used at the site.
- **Instruments** – enter the name, model and serial number of each instrument used.
- **Technicians** – enter the names of the technicians that will be using the software or instruments. If a name is misspelled and corrected at a future date, the correction is applied to all previous data records.

The screenshot displays the AZI Jerome Communications Software interface. The main window is titled "Instrument Checks" and contains a table with the following data:

Instrument	Date
▶ Jim's 631, 631-X, SN 1004	Oct-16-2002
▶ Jim's 631, 631-X, SN 1004	Oct-14-2002
▶ Kathy's 631, 631-X, SN 1021	Oct-16-2002
* [Empty]	

Below the table, there are fields for "Technician: Mr Brown" and a list of tasks: "1. Perform Sensor Regeneration: []", "2. Run 3 blanks (Must be 0.002 or less)", and "3. Function Test Module Readings".

Overlaid on this are three other windows:

- Sites**: A table with "Site Name" and "Address" columns. Data includes "Phoenix Water Treatment Plant" (Address: 1912 Water Blvd.) and "Tempe Water Treatment Plant" (Address: Phoenix, AZ 88888). It also has a "Sample Location" section with "NW Fence" and "Scrubber".
- Instruments**: A table with "Name", "Model", and "Serial Number" columns. Data includes "Jim's 631" (Model: 631-X, Serial: 1004) and "Kathy's 631" (Model: 631-X, Serial: 1021).
- Technicians**: A table with "Name" column. Data includes "Mr Brown".

The bottom of the main window shows "Form View" and "FLTR" and "NUM" buttons.

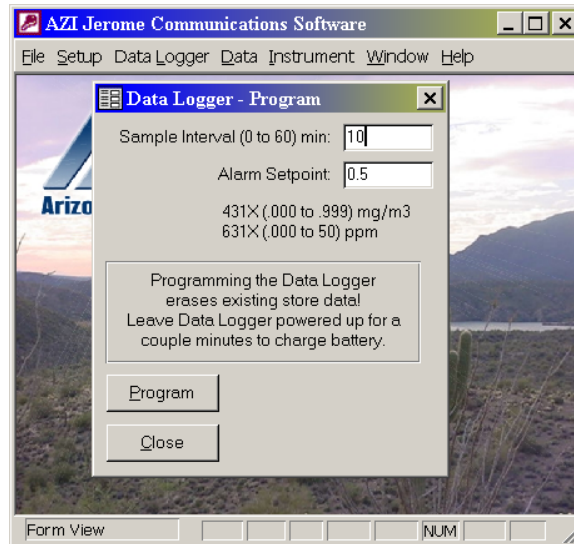
5.3. Data Logger menu

The Data Logger is used to collect the data from the instrument, but first it must be programmed.

To program the Data Logger:

Connect the JCS Interface Cable as follows:

- Attach the connector marked “DATA LOGGER” to the Data Logger.
- Attach the connector marked “PC” to the computer.
- Attach the connector marked “INSTRUMENT” to the instrument.
- Turn the instrument ON.
- In JCS, click on the “Data Logger” drop-down menu, and then click on “Program.”
- The Program Menu allows setting of the sample interval and alarm setpoint value into the Data Logger.
 - Do not use a short Sample Interval that would require more than 2 regenerations per day. Try a 10 to 15 minute sample interval initially.
 - Set the Alarm Setpoint if desired or leave it blank. A blank alarm setpoint has the effect of turning off the alarm.
 - Click on the Program button to set the values into the Data Logger.



- Disconnect the JCS Interface Cable from the instrument and Data Logger.
- Attach the Data Logger directly to the instrument.
 - The Data Logger can be left unpowered for a few hours without losing its time clock. Turn the instrument on every few hours for a few minutes to power the Data Logger and retain the clock and programming.

When you are ready to begin sampling:

- Turn the instrument ON
- Press the sample button.

When finished sampling:

- Turn the instrument off.
 - Remove the Data Logger from the instrument and attach it to the JCS Interface Cable connector marked “DATA LOGGER.”
 - Ensure the JCS Interface Cable’s “PC” connector is still attached to the computer.
 - Connect the JCS Interface Cable connector marked “INSTRUMENT” to the instrument.
 - Turn the instrument ON.

- Click on “Data Logger” and then on “Retrieve Data.”
- Select the information for this sampling session from the pull down tabs for each line.
- Ensure the date and time are correct.
- Add a comment if desired.
- Click on the Retrieve button.
 - Data files stored in the Data Logger will be transferred into the computer.
- After the data is in the computer, the program loads the Data Form to allow you to view the data on-screen.

The screenshot shows a software window titled "AZI Jerome Communications Software" with a menu bar containing "File", "Setup", "Data Logger", "Data", "Instrument", "Window", and "Help". Below the menu bar, there are two tabs: "Data Logger - Program" and "Data Logger - Retrieve Data". The "Data Logger - Retrieve Data" tab is active and contains the following fields:

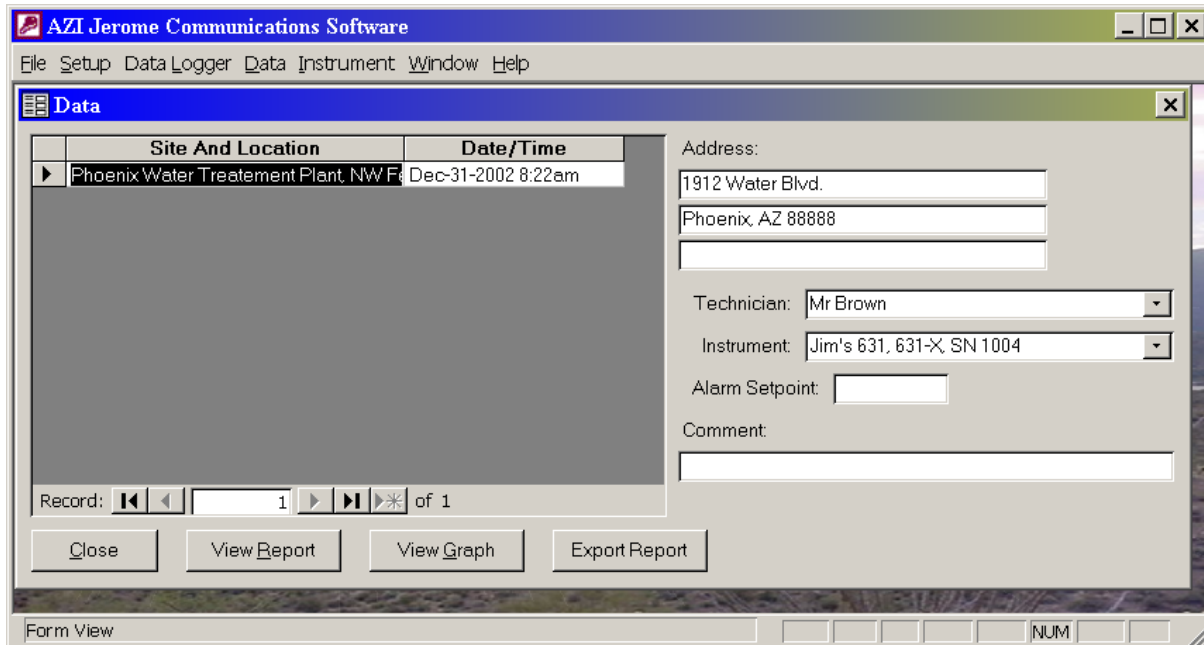
- Site And Location: Phoenix Water Treatment Plant, Scrub...
- Technician: Mr Brown
- Instrument: Jim's 631, 631-X, SN 1004
- Date/Time: Jan-17-2003 10:07am
- Comment: (empty text box)

At the bottom of the form are two buttons: "Retrieve" and "Close". The status bar at the bottom of the window shows "Form View" and "NUM".

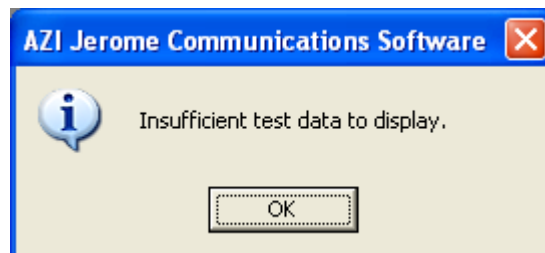
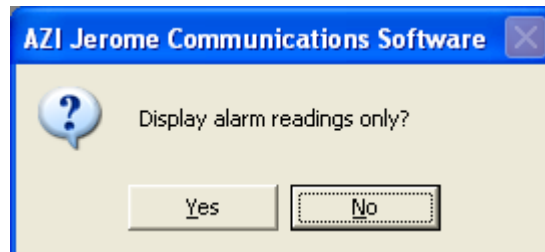
5.4. Data menu

Click on **Data** on the menu bar to view or export data records.

- Select the record you want to view or export from the list.
 - The address, technician, instrument and alarm setpoint and comment for the selected record are displayed to the right of the selection list.



- Click on **View Report** or **View Graph** buttons display the data.
- To view the report:
 - Click on the View Report Button.
 - If an Alarm Setpoint was specified, then click on either Yes or No to answer the question “Display alarm readings only?” If you click on yes and there are no readings above the alarm setpoint, the “Insufficient test data to display” message will be displayed.
- To exit from a report or graph, press the ESC key on the computer’s keyboard.



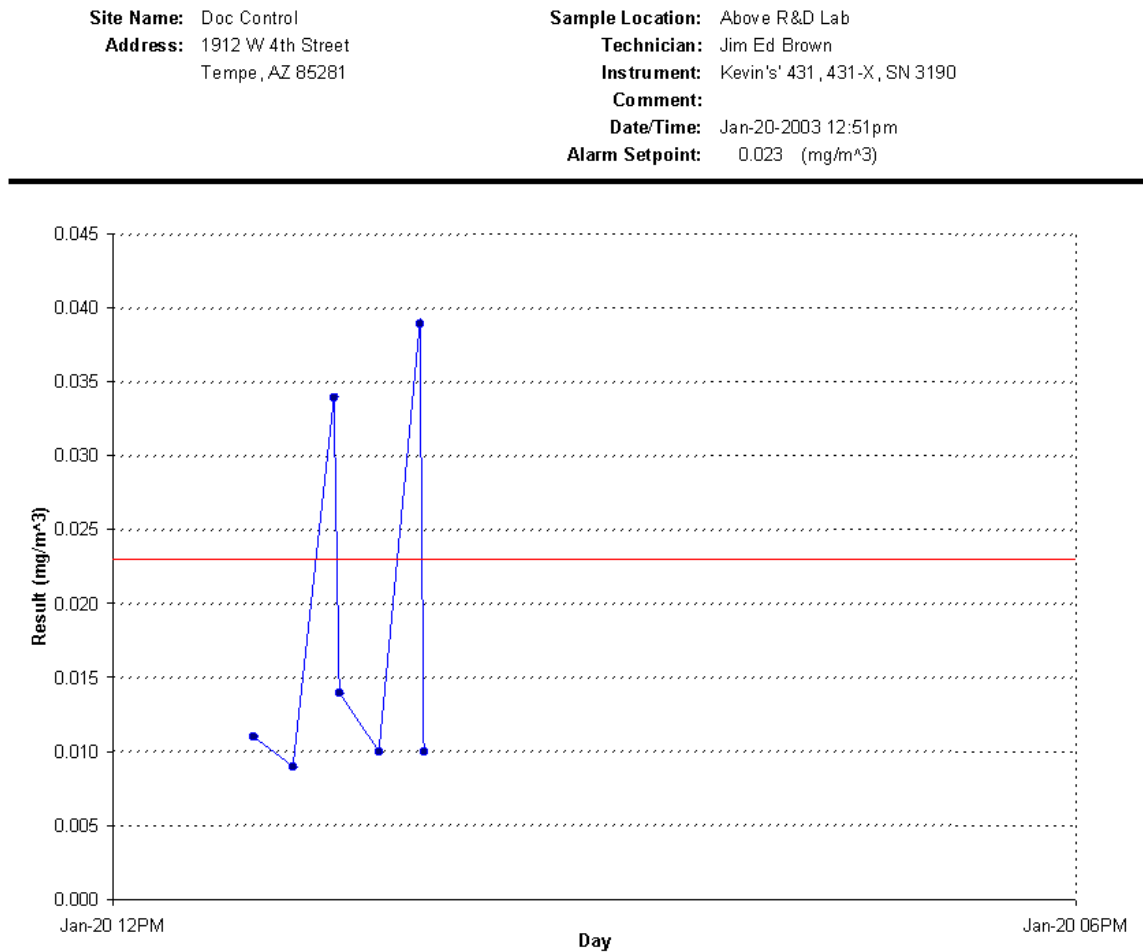
A sample report is shown below.

Site Name: Doc Control		Sample Location: Above R&D Lab	
Address: 1912 W 4th Street Tempe, AZ 85281		Technician: Jim Ed Brown	
		Instrument: Kevin's' 431, 431-X, SN 3190	
		Comment:	
		Date/Time: Jan-20-2003 12:51pm	
		Alarm Setpoint: 0.023 (mg/m ³)	

DATE/TIME	RESULT (mg/m ³)
1 Jan-20-2003 12:52:30pm	.011
2 Jan-20-2003 1:07:29pm	.009
3 Jan-20-2003 1:22:29pm	.034
4 Jan-20-2003 1:24:29pm	.014
5 Jan-20-2003 1:39:29pm	.010
6 Jan-20-2003 1:54:29pm	.039
7 Jan-20-2003 1:56:29pm	.010

Readings:	7
Minimum:	0.009
Maximum:	0.039
Average:	0.018
SD:	0.0127

An example graph is shown below.



Export Report – Sends a copy of the report (in the file format specified in the File→Configuration menu) to the directory specified in the File→Configuration menu.

Deleting or Editing Records

To delete or edit records, JCS uses the Microsoft Access database and therefore, record additions, deletions, and edits are performed using Access policies:

- **Delete** – Delete unwanted records by selecting the record selector arrow on the left of the record and press the Delete key on the computer's keyboard. A reminder will appear indicating that the Delete cannot be undone. Press Yes to proceed or No to cancel. Please note that a record cannot be deleted if it is associated with other records. For example: a technician record cannot be deleted if it is referred to by a Data record. Delete the Data record first, then delete the technician record. If the data record must be maintained, the technician information will be maintained as well.
- **Edit** – Edit the fields of a record by typing in the desired field. The edits are saved when the form is closed. If a field is edited, the correction is applied to all previous data records. For example, after the address is changed, newly printed reports will have the corrected address. Edits can also be made from the appropriate selection in the Setup menu. For example, select Setup→Technician to edit the Technician list.

5.5. Instrument menu

The Instrument menu is used to program the computer to control the sampling rate of the instrument when the instrument is connected to the computer. The JCS Interface Cable passes the control signals to the instrument and data to the computer.



- Auto Sample
 - The Site and Location, Technician, and Instrument records must be set up in the Setup menu prior to Auto-sampling.
 - Enter the Sample Interval in minutes. Do not use a short sample interval that would require more than 2 regenerations per day. Try a 10 to 15 minute sample interval initially.
 - If an unsafe or critical level is known, enter that level in the Alarm Setpoint field.

The 'Auto Sample' dialog box contains the following fields and controls:

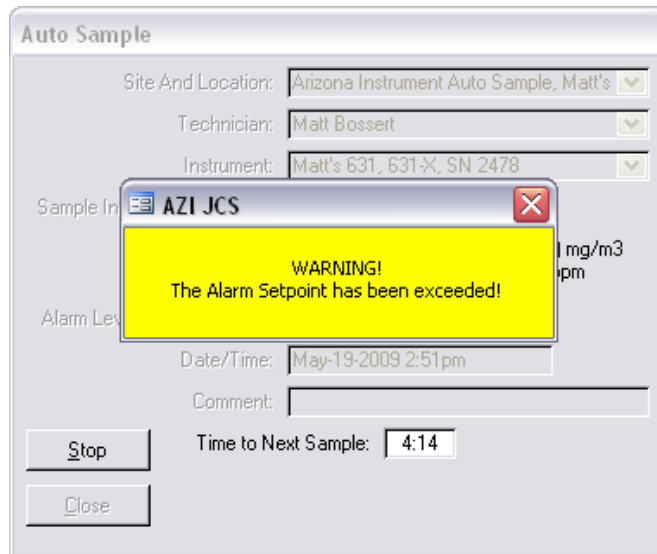
- Site And Location:
- Technician:
- Instrument:
- Sample Interval (1 to 60) min:
- Alarm Setpoint: 431X (.000 to .999) mg/m3
631X (.000 to 50) ppm
- Alarm Level Sample Interval:
- Date/Time:
- Comment:
- Buttons: Start, Close

- Click on the Start button to begin sampling.
- The **Test Data** form opens and displays the current samples as they are received from the instrument.
- The Time to Next Sample box will appear and show a running time remaining until the next sample will be taken. When a sample is being taken, the time is replaced with the word NOW.
- Clicking on the **View Report** or **View Graph** button, after at least two samples have been taken, will immediately display the collected data currently in the database.

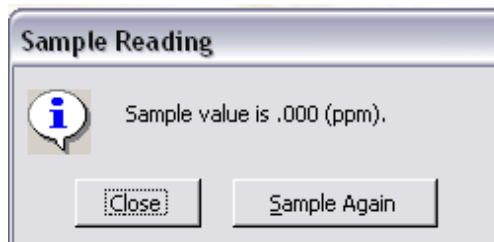
Num	Date/Time	Result
1	Jan-20-2003 2:10:30pm	.010

Buttons: Close, View Report, View Graph

- If the alarm level is exceeded, the alarm will sound through the computer and the screen will display a flashing warning message as shown.

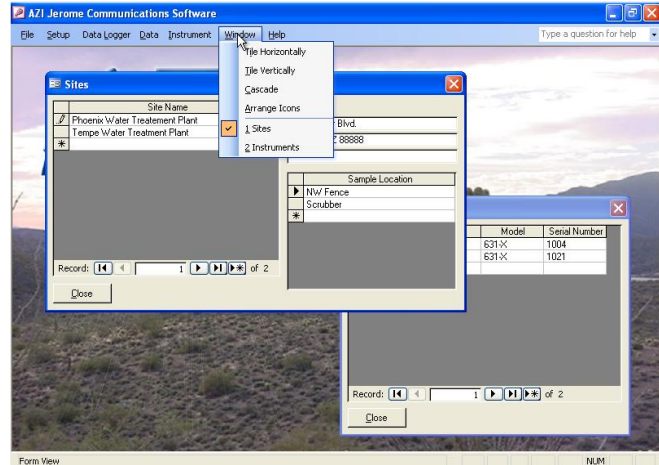


- Take One Sample
 - Click on Take One Sample to direct the instrument to take a sample. This selection has the same function as the SAMPLE button on the instrument. The measured concentration will be displayed. If desired, press the "Sample Again" button to take another sample.



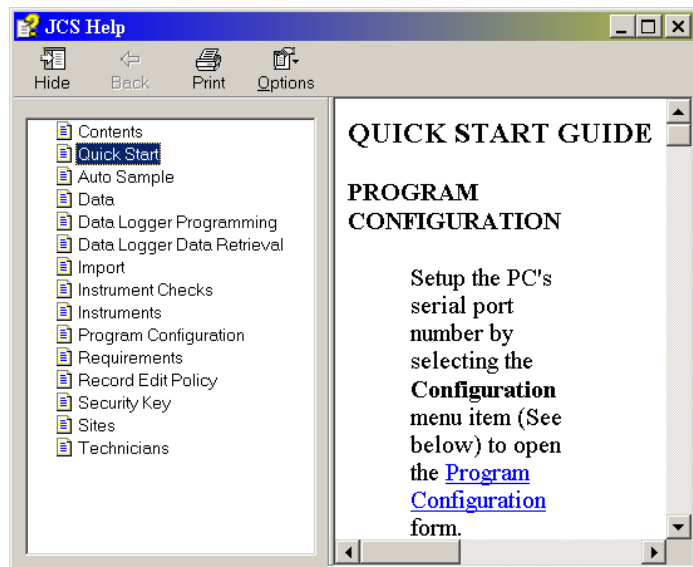
5.6. Window menu

- This selection operates as it does in many other Windows®-based programs. It tiles open windows horizontally or vertically or cascades them over each other.



5.7. Help menu

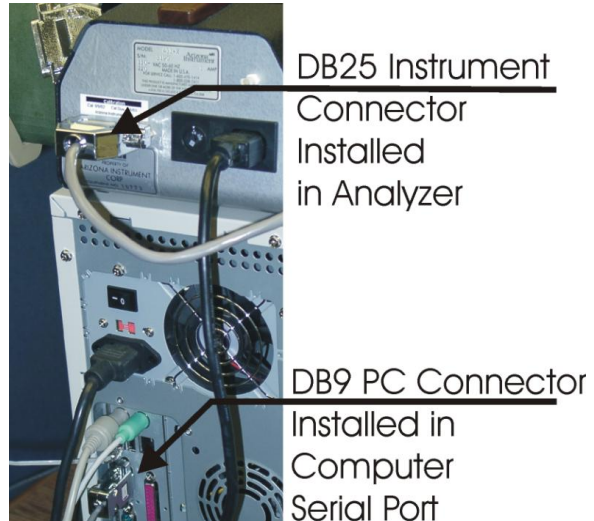
- Selecting “Contents” in the Help menu brings up the Help contents listing with a brief explanation of those items necessary for successful program operation.
 - The Quick Start selection in the Contents listing has hyperlinks built into it that can be clicked to navigate to the hyperlinked sections.
- The Help menu can be set to display automatically at program startup by checking the “Display Help on Startup” box in the File→ Configuration window.



6. Operation

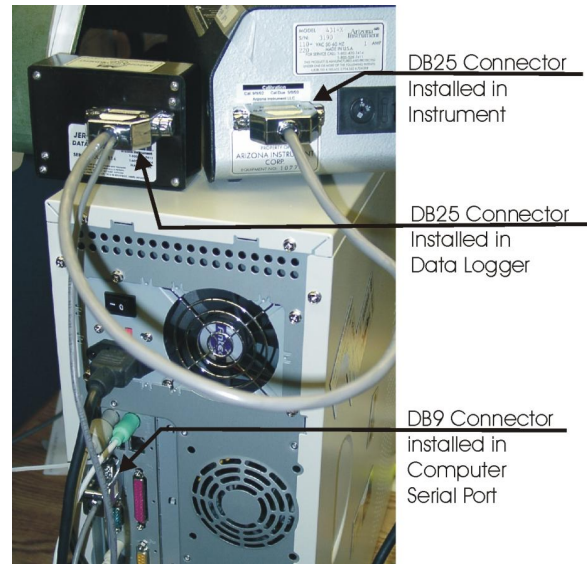
6.1. Instrument operation from the computer

- Connect the JCS Interface Cable's "PC" connector to the computer and the "INSTRUMENT" connector to the instrument.
- Ensure that the middle connector is not attached to the Data Logger.
- Launch JCS on the PC.
- If all preliminary set-up procedures have been completed and the instrument is turned ON,
 - Click on Instrument.
 - Click on Auto Sample.
 - Select the Site/Location.
 - Select the Technician.
 - Select the Instrument.
 - Enter or verify the Sample Interval.
 - Enter or verify the Alarm Level.
 - Add a comment if desired.
 - Click on the Start button.
- The instrument should take one sample within a few seconds and repeatedly thereafter at the preset rate.



6.2. Instrument operation from the Data Logger

- Ensure the instrument is turned OFF
- Connect the JCS Interface Cable's "PC" connector to the computer, the "DATA LOGGER" connector to the Jerome® Data Logger, and the "INSTRUMENT" connector to the instrument.
- Launch the JCS program on the PC.
- If all preliminary set-up procedures have been completed,
 - Turn the instrument ON.
 - Click on Data Logger.
 - Click on Program.
 - Enter the Sample Interval and Alarm Setpoint.
 - Click on Program.
- Turn the instrument OFF
- Disconnect the JCS Interface Cable from the instrument and from the Data Logger.
- Connect the Data Logger directly onto the instrument.
- When the instrument is at the location for sampling:
 - Turn the instrument ON.
 - Press the Sample Button on the instrument.
- When sampling is complete:
 - Turn the instrument OFF.
 - Remove the Data Logger from the instrument.
 - Connect the JCS Interface Cable's "PC" connector to the computer, the "DATA LOGGER" connector to the Jerome® Data Logger, and the "INSTRUMENT" connector to the instrument.
 - Turn the computer on if necessary, and launch the JCS program.
 - Turn the instrument ON.
 - Click on Data Logger.
 - Click on Retrieve Data.
- The data from the Data Logger will be placed in the database and be available for review and/or printing.
- Turn the instrument OFF and remove all cabling when finished.



TRADEMARK AND COPYRIGHT PROTECTION

Jerome[®], Arizona Instrument[®] and the stylized AZI are all registered trademarks of Arizona Instrument LLC. Instrument firmware and software is copyright protected.

© Copyright 2000-2009, Arizona Instrument LLC. All Rights Reserved.

Windows[®] and Access[®] are registered trademarks of Microsoft Corporation in the United States and other countries.

Arizona Instrument LLC
Jerome[®] Communication Software Installation and Operation Manual
AZI P/N: 700-0042-B
May 2009

If you have any questions regarding the operation of this instrument, please call 800-528-7411, 602-470-1414, fax 480-804-0656 or send e-mail to support@azic.com.

Arizona Instrument LLC
3375 N Delaware Street
Chandler, AZ 85225

(800) 528-7411

(602) 470-1414

Fax (480) 804-0656

<http://www.azic.com>

email:

azi@azic.com - General

intl@azic.com - International

support@azic.com - Customer Support