SafEye™

WinHost Configuration and Diagnostic Software

Quasar 900 Gas Detector

User Guide

SPECTREX

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1 About this Guide

This guide describes the SafEye Quasar™ 900 SPECTREX WinHost Configuration and Diagnostic software application and its features, and provides instructions on how to install, operate, and maintain the software.

> **Note:**
>
> This user guide should be read carefully by all individuals who have or will have responsibility for using, maintaining, or servicing the product.

This guide includes the following chapters and appendices:

- **Chapter 1**, **About this Guide**, details the layout of the guide, includes the release history, a glossary and abbreviations, and explains how notifications are used in this guide.

- **Chapter 2**, **Product Overview,** provides a general overview of the software, principles of operation, and performance considerations.

- **Chapter 3**, **Installing WinHost Software**, describes how to install the software application.

- **Chapter 4**, **Getting Started**, describes how to connect the computer to the detector and how to run the software application.

- **Chapter 5**, **Operating WinHost**, describes how to operate and configure the detector using the software application.

- **Chapter 6**, **Maintaining Your Detector**, provides instructions for cleaning and maintaining the detector.

1.1 Reference Document

- **TM888200**, SafEye Quasar™ Open Path IR Gas Detector Series 900 User and Maintenance Manual.

1.2 Release History

Rev	Date	Revision History	Prepared by	Approved by
B	March 2013	First Release	Jay Cooley	Shaul Serero
C	November 2013	Second Release	Jay Cooley	Shaul Serero
Da	October 2017	Third Release	Jay Cooley	Shaul Serero
Ea	August 2018	Fourth release	Michal Heller	Udi Tzuri

1.3   Notifications

This section explains and exemplifies the usage of warnings, cautions, and notes throughout this guide:

Warning:

This indicates a potentially hazardous situation that could result in serious injury and/or major damage to the equipment.

Caution:

This indicates a situation that could result in minor injury and/or damage to the equipment.

Note:

This provides supplementary information, emphasizes a point or procedure, or gives a tip to facilitate operation.

2 Product Overview

The SafEye Quasar™ 900 WinHost is communication software for the SafEye Quasar™ family detector series 901, 902, 903. The program displays information (such as status, gain, address, signals, and LEL) and makes it possible to change the detector's configuration.

2.1 Software Overview

The SafEye Quasar™ 900 WinHost software makes it possible to:

• Communicate with SafEye Quasar™ Gas Detectors

• Read status and parameters from the detector

• Record relevant detector data to a log file (S/N.txt)

• Calibrate the detector

2.2 Minimal Requirements

Following requirements are the minimum for operating this software:

• Pentium® 3GHz

• Windows XP,7,8, or 10

• 2GB of RAM

• 10GB hard disk free space

• Isolated RS-485 Interface Card to be defined as COM1, COM2, COM3, or COM4; or RS-232/RS-485 converter to connect to standard COM port

2.3 Standards

• **EIA 485:** Electrical characteristics of enhanced Voltage Digital Interface Circuits.

3   Installing WinHost Software

To load your computer with the SafEye Quasar™ WinHost configuration and diagnostic software:

1 Copy the SafEye Quasar™ installation files into the correct drive.

2 Start the SafEye Quasar™ WinHost software installation by running the setup.exe file.

3 Follow the installation instructions.

4 Connect the detector unit to the RS-485 communications port (see *Connecting the Detector to the Computer* on page 13).

5 Start the SafEye Quasar™ WinHost software with the specified COM port number as a parameter (see *Establishing the COM Port* on page 14).

4 Getting Started

4.1 Connecting the Detector to the Computer

Before you can perform any configuration or diagnostic operation on a detector, you must connect the computer to the detector using the harness cable provided.

To connect the computer to a detector:

1 Connect one end of the USB cable to the computer USB port.

2 Connect the other end of the USB cable to the USB serial (RS-485) adapter.

3 Connect the serial port of the adapter to the harness cable.

To connect the detector to the harness cable:

1 Connect one side of the cable to detector Terminal 5 for RS-485 (+).

2 Connect the other side of the cable to detector Terminal 6 for RS-485 (-)

To connect a socket D-Type on the other side of the cable:

1 Connect RS-485 (+) to Pin 2.

2 Connect RS-485 (-) to Pin 1.

3 Connect RTN to Pin 5.

To perform USB adapter setup:

1 Unscrew the cover of the USB adapter.

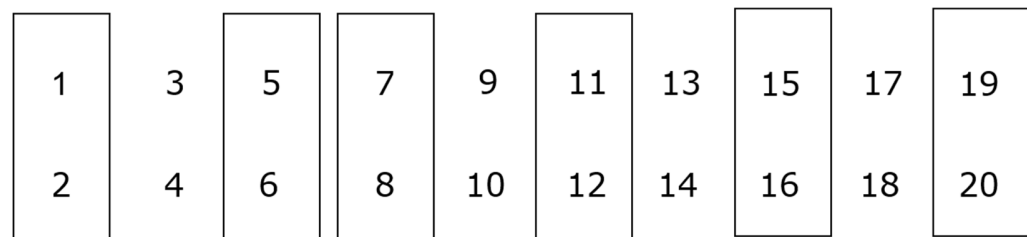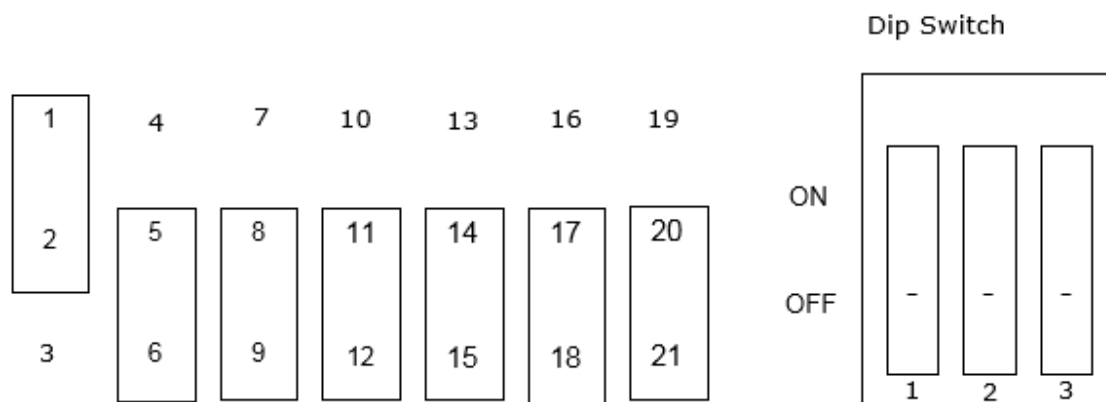2 There are 2 options for setting up the jumpers:

   a **Option 1**:

1	3	5	7	9	11	13	15	17	19
2	4	6	8	10	12	14	16	18	20

Figure 1: USB Adapter Setup Option 1

b Option 2:

Figure 2: USB Adapter Setup Option 2

3 Close the USB adapter cover.

4 Connect the cable.

> **Caution:**
>
> If using a different adapter than the one recommended, check that the D-connector adapter wiring is similar to the wiring above (if not, adjust the cable wiring to fit the desired adapter).

4.2   Establishing the COM Port

Before using the software, you need to establish the number of the COM port.

To view the COM port used by the adapter:

1 Select **Start** > **Settings** > **Control Panel** > **System** > **Hardware** > **Device Manager**.

2 The COM port number is displayed. This is the COM port number you will use.
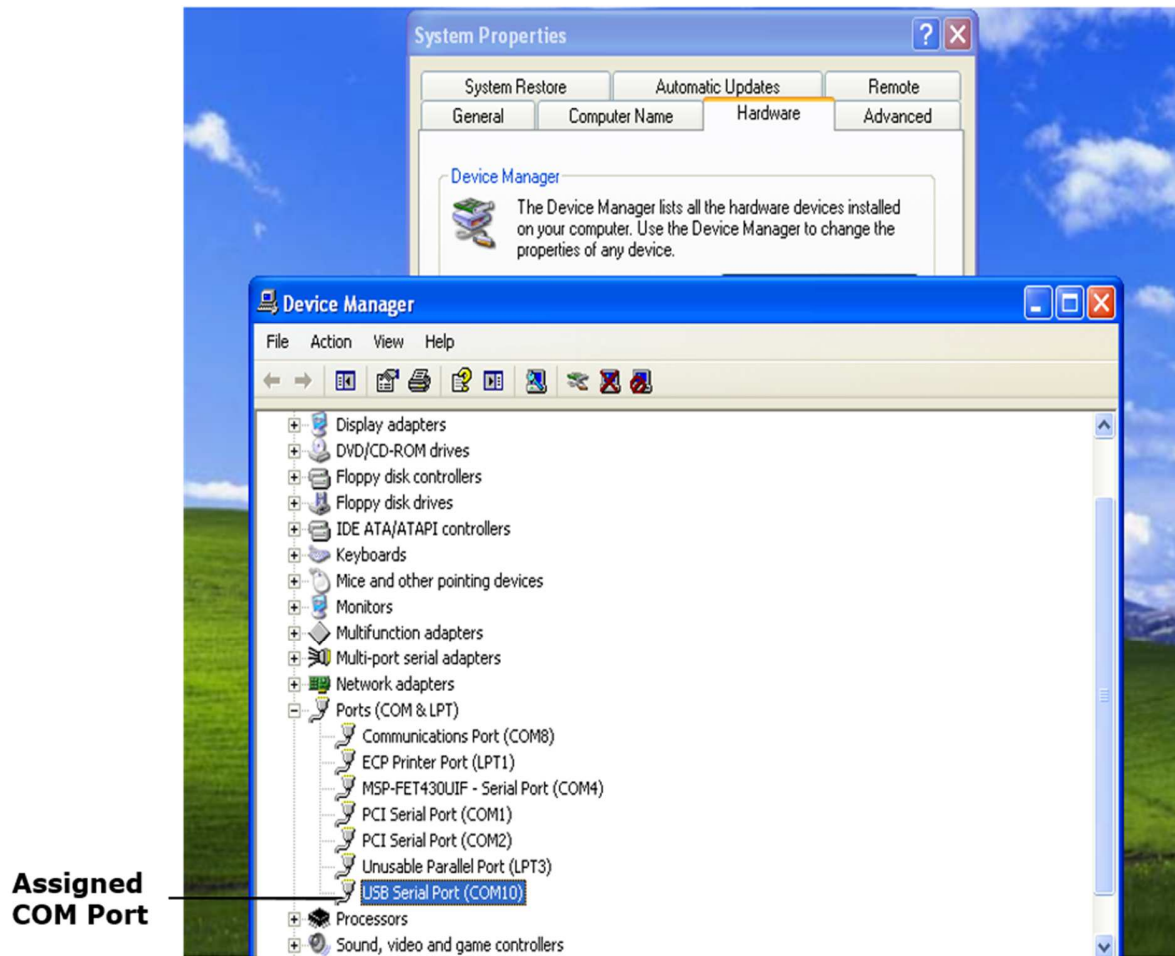
Figure 3: COM Port Number

4.3   Running WinHost

This section describes how to run the WinHost software.

To run the WinHost software:

1 Select **Start** > **Programs** > **SafEye Quasar** > **Series**

2 The WinHost software application runs and the opening window appears.
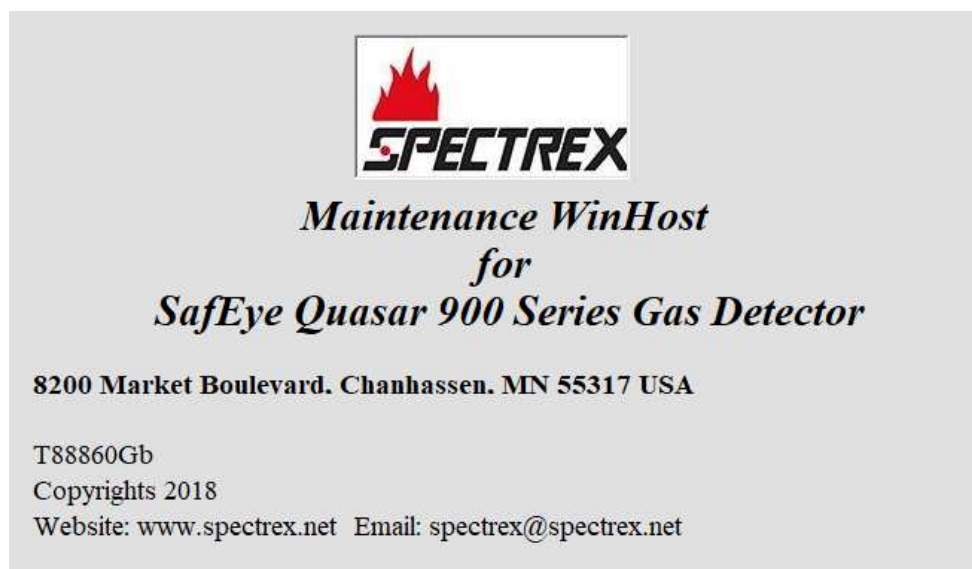
Figure 4: Opening Window

3 After a few seconds, the opening window disappears and the communication setup dialog box appears:
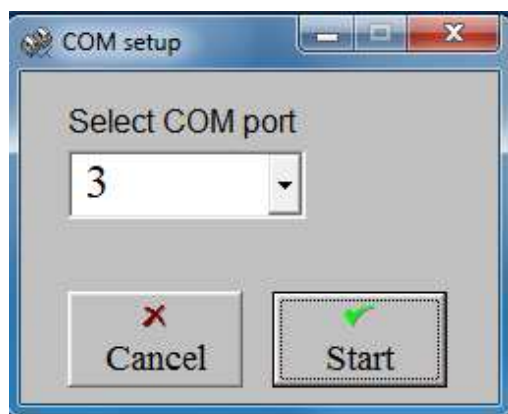

Figure 5: Communication Setup Dialog Box

4 From the drop-down menu, select the assigned communication port number (see *Establishing the COM Port* on page 14).

5 Click **Start**.

The main window appears.

5 Operating WinHost

5.1 Main Window

The main window monitors the detector. Figure 6 shows the main window.

Note:

For Windows XP, in the case of poor communication, press **F12** and wait until good communication is achieved.
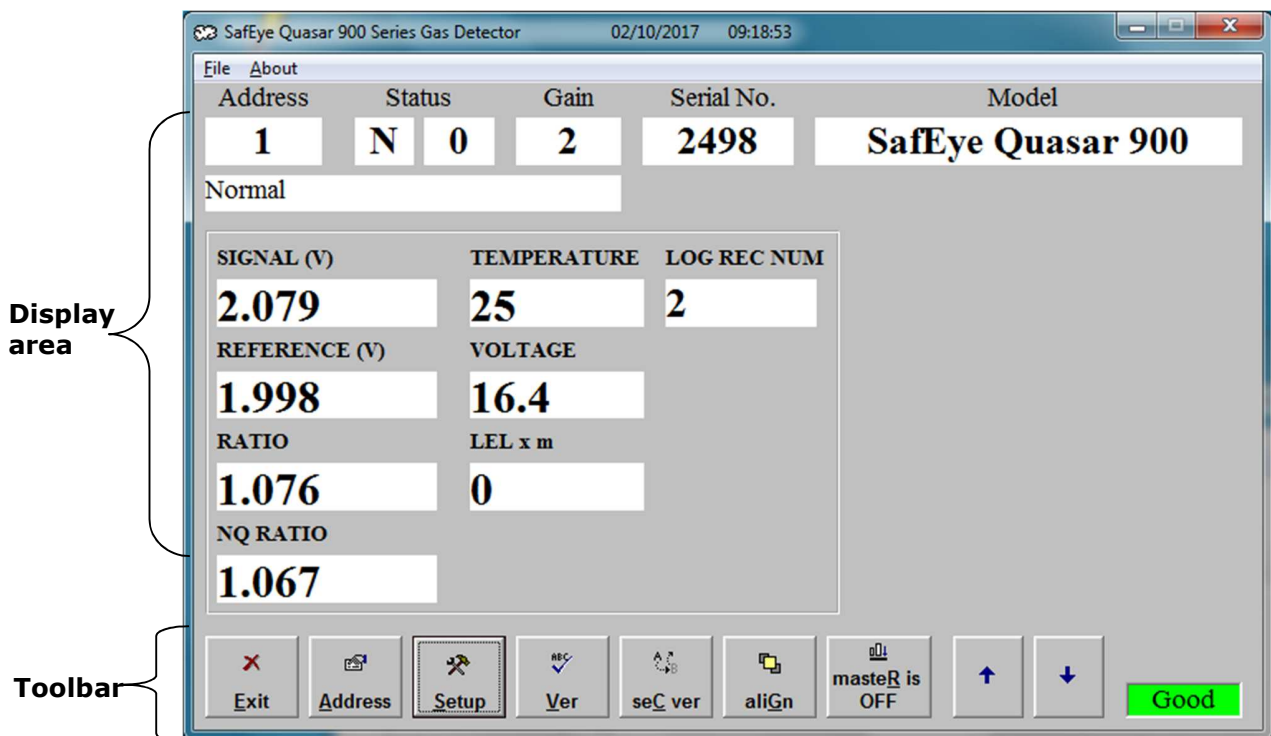

Figure 6: Main Window

The main window is divided into 2 main areas:

- **Display Area**: Displays the detector's various parameters.
- **Toolbar**: Enables access to various control and diagnostic functions.

5.1.1 Display Area Components

Table 1 describes the composition of the display area in the main window.
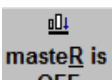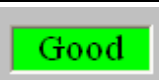
Table 1: Main Window Display Area

Element	Description
About	Opens a window that displays software version information.
Address	The address currently viewed by the software. (You can change the current address by using the up and down arrows).
Status	The detector's current operational status.
Gain	Electronic amplification.
Serial No.	The detector's serial number. Each detector has a unique serial number.
Model	The detector's model.
SIGNAL REFERENCE RATIO NQ RATIO TEMPERATURE VOLTAGE LEL xm LOG REC NUM	See Table 4.

5.1.2   Toolbar Buttons

Table 2 describes the buttons on the toolbar.

Table 2: Main Window Toolbar Buttons

Button	Button Name	Description
Exit	Exit	Closes the application.
Address	Address	Opens a dialog box that enables you to set a new address location for the detector. See *New Address* on page 23.
Setup	Setup	Opens a dialog box that enables you to configure the detector. See *Setup Table Window* on page 21.
Ver	Primary micro software version	Displays the version and details of the primary micro software. See *Viewing Micro Version* on page 24.
seC ver	Secondary micro software version	Displays the version and details of the secondary micro software. See *Viewing Micro Version* on page 24.
aliGn	Align	Aligns the detector with the source.
masteR is OFF	Master	Seeks the address of the connected detector (from 1 to 247).*
↑ ↓	Up and down arrows	Changes the address currently viewed by the software.
Good	Good	Indicates the status of the communication between the detector and the computer.

∗ Do not click the address finding button when more than 1 detector is connected.

5.1.3 Detector Status

The WinHost software displays the status in 2 fields: a letter field and a number field. The detector can have the following statuses:

Table 3: Detector Status

Characters	Group	Description
N0	Normal	Normal
B0		Normal operation during interference
C0		Maintenance call for low signal or reference
P71,72,73	Fault	Memory failure
V83		Low voltage
F31,32		High noise
F35		4–20mA failure
O0		Obscuration
M0		Misalignment
I0		Saturation
S0		Searching pulse
DD		Disconnection
A0	Alarm	Alarm
W0	Warning	Warning
X0	Alignment	Align
Y0		Standby
G0		Zero calibration

5.1.4 Detector Channel Information

Table 4 describes the detector data channels information:

Table 4: Detector Channels Description

Channel	Description
Signal	Voltage signal after electronic amplification (depends on gain).
Reference	Voltage reference after electronic amplification (depends on gain).
Ratio	Ratio between signal and reference.
NQ Ratio	Normalized ratio equals 1 when no gas is present.
Temperature	Temperature inside the detector in °C.
Voltage	VIN measurement.
LEL x m	Actual gas reading of detector.
Log rec num	The detector's available log records.

5.2 Setup Table Window

The setup table window allows the user to view and program the various detector functions. Figure 7 show the setup table window.
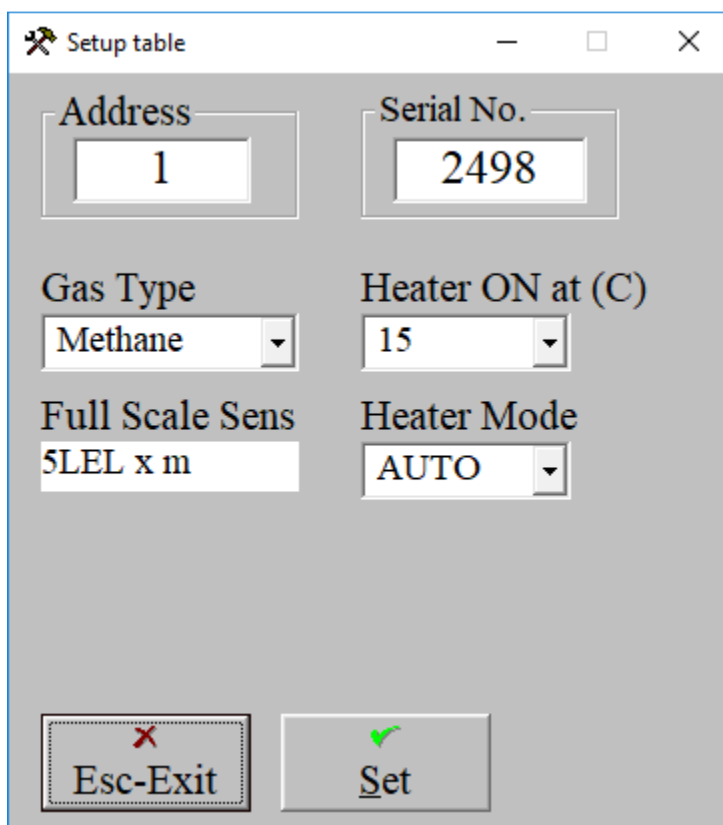
Figure 7: Setup Table Window

■ **To configure the heater state body:**

1 From the main window, click **Setup**.

The setup table window appears.

2 Define the parameters as required.

See *Setup Table Parameters* on page 22 for all available parameters.

3 To define the new setup configuration, click **Set**.

5.2.1 Setup Table Parameters

This section describes the various parameters that you can view in the setup table window.

Table 5: Gas Type

Gas Type	Description
1	100% Methane
2	100% Propane
3	100% Ethylene

Table 6: Full Scale Sensitivity (Read Only)

Value
500[1]
800[2]

[1] Relevant to methane and propane gas types

[2] Relevant to ethylene gas type

Table 7: Heater On

Temperature (˚C)
0
5
10
15
20
25
30

Table 8: Heater Mode

Mode	Description
Off	Heater is always in off mode
Auto	See notes below
On	Heater is always in on mode

Notes:

The heater functions automatically according to the following conditions:

- If the ambient temperature level is below the Heater On parameter plus 10ºC, the heater turns on.
- If the ambient temperature is higher than the sum of Heater On plus 20ºC, the heater turns off.

5.3   Setting a New Address

In this dialog box, you can set a new address for the detector. The valid detector addresses are in range of 1 to 247. Figure 8 shows the new address dialog box.

■   **To change the detector's address:**

1   From the main window, click **Address**.

The new address dialog box appears.

2   In the **Set new address** field, type the new address.

3 Click **SET**.
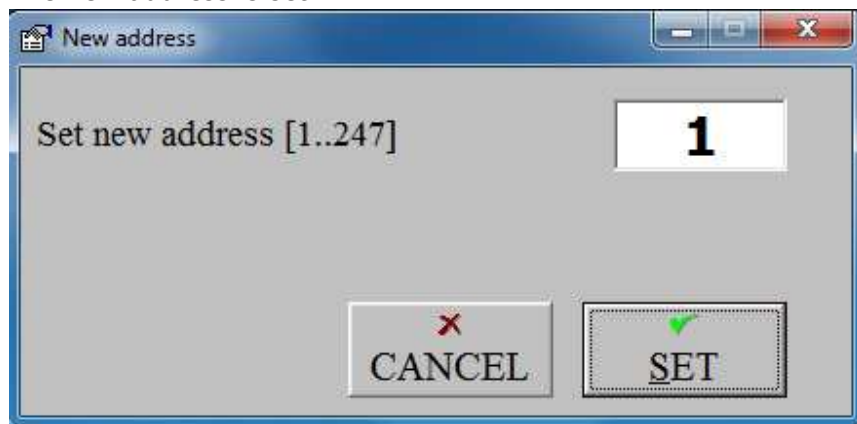
The new address is set.

Figure 8: New Address Dialog Box

5.4 Viewing Micro Versions

You can view the versions of the primary and secondary micro software at any time.

- **To view the primary micro software version:**

  - From the main window, click **Version**.

    A field appears, displaying the software version:
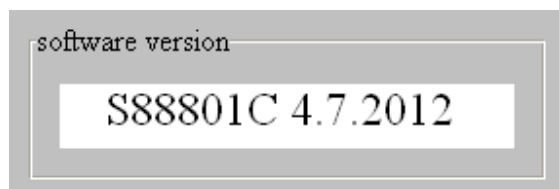

Figure 9: Primary Micro Version

- **To view the secondary micro software version:**

  - From the main window, click **SeC ver**.
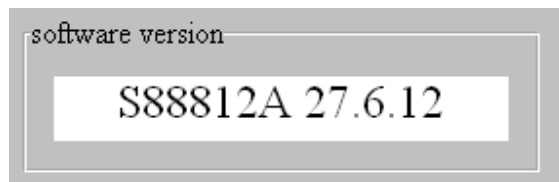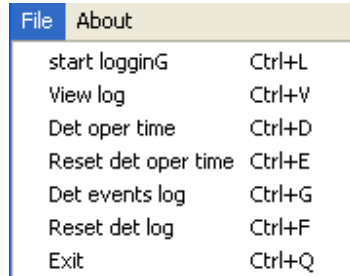
    A field appears, displaying the software version:

Figure 10: Secondary Micro Version

5.5 Logging Detector Events

■ **To log detector events:**

1 From the main window, click **File** > **Start Logging**.

The log record dialog box appears:
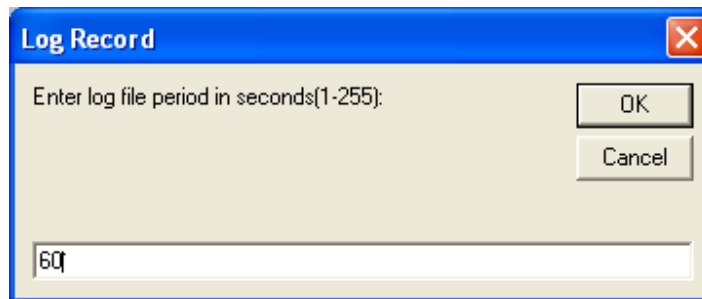
2 In the text field, enter the log file period (in seconds).

3 Click **OK**.

Logging begins. A line is written to the log (S/N.txt) every time the log file period is over and any time there is a change in the detector's status.

Figure 11: Log File Record Message

5.6 Viewing the Log File

■ **To view the log file:**

1 From the main window, click **File** > **View log**.

The log file viewer dialog box appears:

2 In the text field, enter the detector's serial number, and click **OK**.
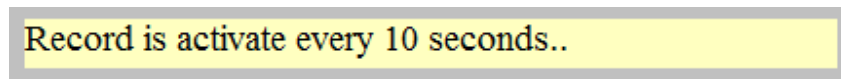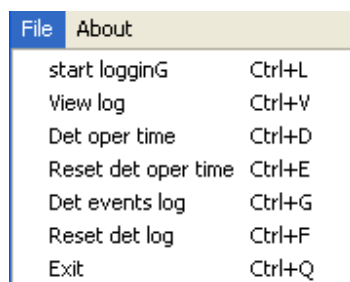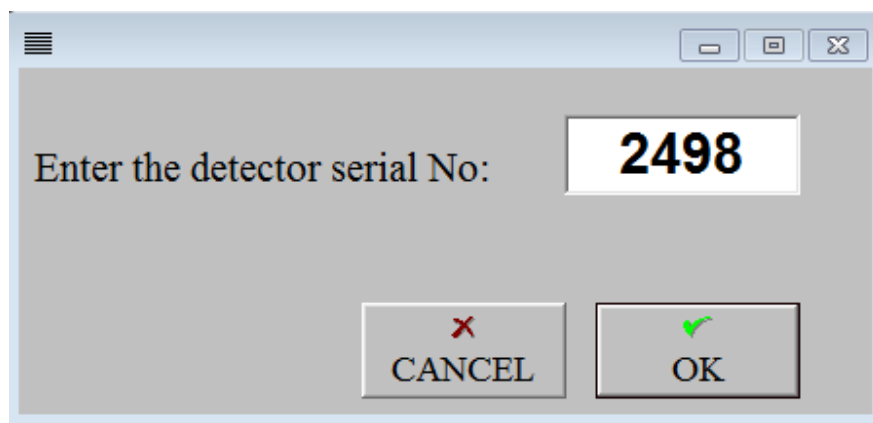
3 The log file viewer window appears:

	Status	Time	Date	T	Gain	SIG	REF	Ratio	NQRat	LEL
1	M0	15:58:08	27/09/17	33	1	2.81	0.54	7.95	1.00	0
2	M0	15:58:10	27/09/17	33	1	2.76	0.54	8.03	1.00	0
3	M0	15:58:12	27/09/17	33	1	2.79	0.55	7.96	1.00	0
4	M0	15:58:14	27/09/17	33	1	2.82	0.54	7.99	1.00	0
5	M0	15:58:16	27/09/17	33	1	2.76	0.55	7.91	1.00	0
6	M0	15:58:18	27/09/17	33	1	2.79	0.53	8.00	1.00	0
7	M0	15:58:20	27/09/17	33	1	2.79	0.54	7.96	1.00	0
8	M0	15:58:22	27/09/17	33	1	2.76	0.55	7.99	1.00	0
9	M0	15:59:09	27/09/17	33	1	2.77	0.52	8.08	1.00	0
10	M0	15:59:10	27/09/17	33	1	2.85	0.54	7.95	1.00	0
11	M0	15:59:11	27/09/17	33	1	2.84	0.54	7.92	1.00	0
12	M0	15:59:12	27/09/17	33	1	2.77	0.54	7.99	1.00	0

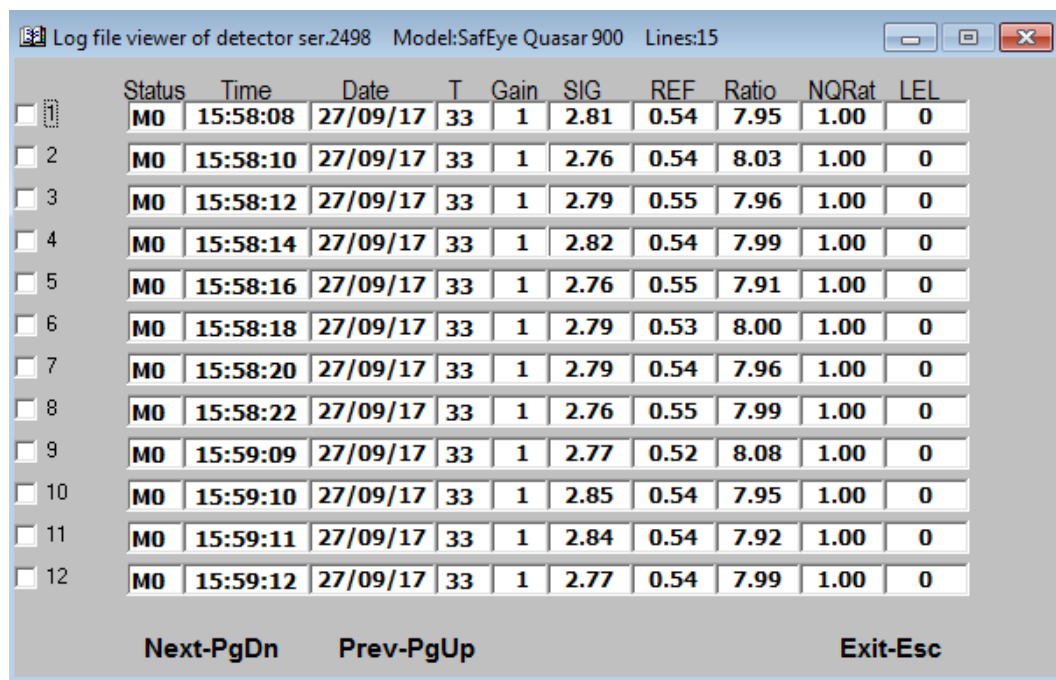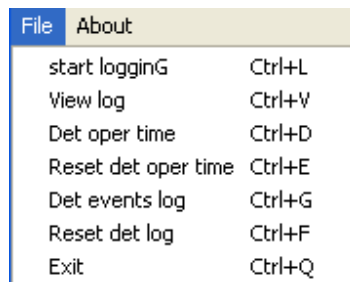Next-PgDn   Prev-PgUp   Exit-Esc

Figure 12: Log File Viewer
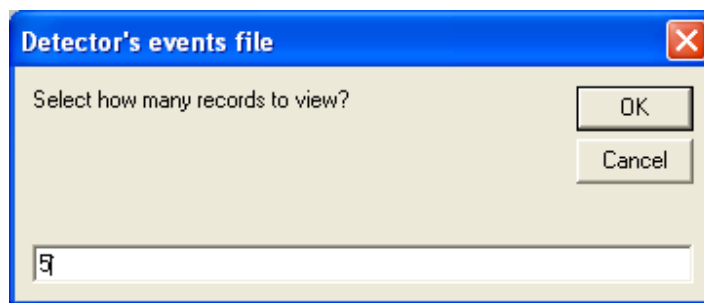
5.7   Reading Events from the Log

The detector has a log that contains the 256 most recent status change events. To read events from the log, the number of available records should first be read from the LOG REC NUM value.

■   **To read the events from the log:**

1   From the main window, click **File** > **Det events log**.

File	About	
start logginG	Ctrl+L	
View log	Ctrl+V	
Det oper time	Ctrl+D	
Reset det oper time	Ctrl+E	
Det events log	Ctrl+G	
Reset det log	Ctrl+F	
Exit	Ctrl+Q	

The log events dialog box appears:

Detector's events file

Select how many records to view?
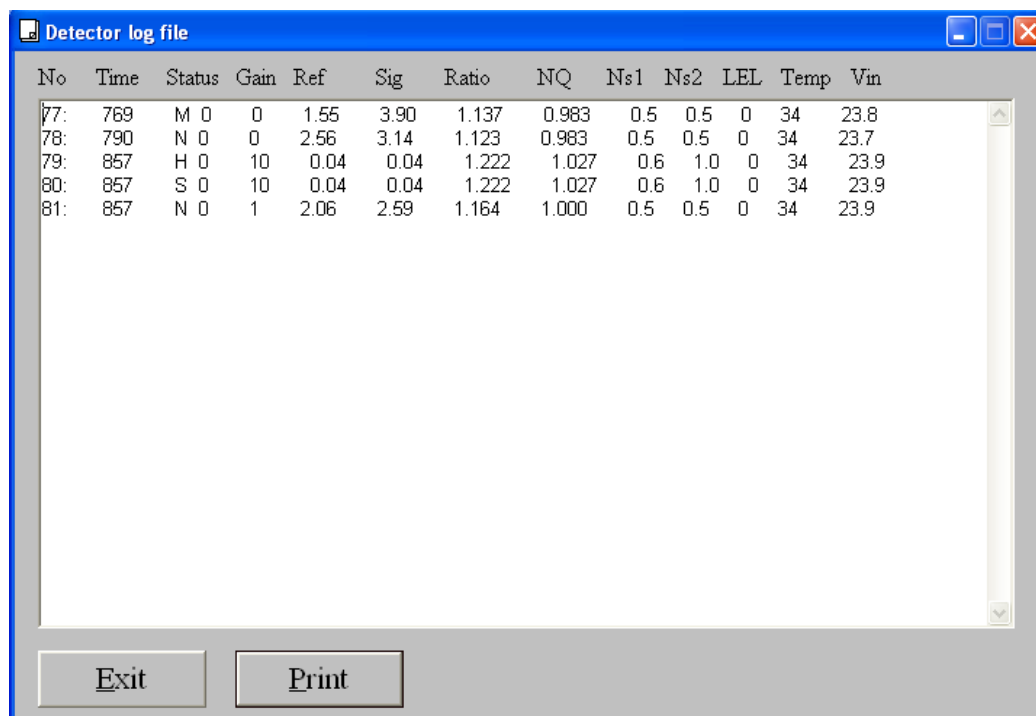
[OK]
[Cancel]

5

2   Enter the desired number of records to view, and click **OK**.

The following text appears:

Loading Detector Events..

The log record viewer appears:

Figure 13: Log Record Viewer

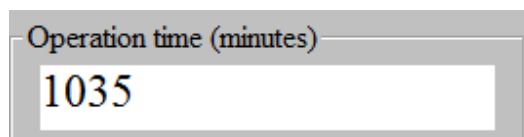### 5.7.1   Resetting Log Events

You can reset the log events.

■ **To reset the log events:**

1 From the main window, click **File** > **Reset det log**.

2 Wait until the LOG REC NUM field displays the value 0.

5.8   Reading Operation Time

The detector records the operating time (in minutes).

■ **To read the detector operating time:**

• From the main window, click **File** > **Det oper time.**

The **detector operating time** field appears:

5.8.1   Resetting Detector Operating Time

You can reset the detector operating time from the file drop-down menu.

■   **To reset the detector operating time:**

•   From the main window, click **File** > **Reset det oper time.**

5.9   Viewing software version information

The about window displays software version information.

■   **To access the about dialog box:**

•   From the main window, click **File** > **About.**

•   The about dialog box appears:

Maintenance WinHost for SafEye Quasar 900 Series Gas Detectors

Part: T88860

Version: Gb

Release: 18/6/2018
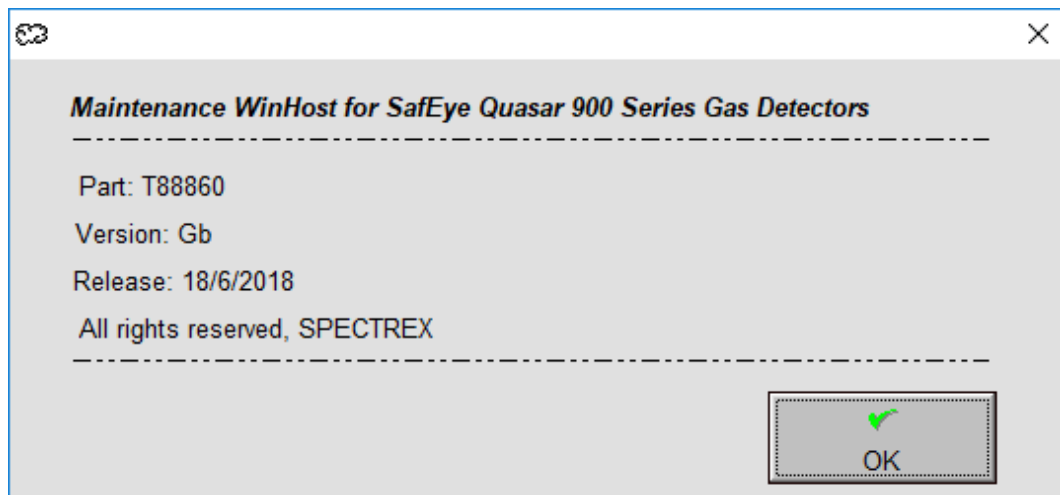
All rights reserved, SPECTREX

OK

Figure 14: About Dialog Box

6   Maintaining Your Detector

The SafEye Quasar™ system requires only simple periodic maintenance to provide satisfactory service and achieve maximum performance.

The detector and source units can be maintained with the use of standard tools and equipment. It is recommended that you record the periodic test results in a maintenance logbook.

■ **To maintain your detector:**

- Clean the optical surfaces of the detector and source once a month.

- Perform alignment and calibration once every six months, or after each time the units are moved or opened.

■ **To clean the optical surfaces:**

1 Turn off the detector.

2 In places where dust or dirt have accumulated on the optical surface, clean the surface with a small soft bristle brush.

3 Wash the surfaces thoroughly with water and a mild non-abrasive detergent.

4 Thoroughly rinse the glass surface with clean water, ensuring no residue is left behind.

5 Dry the glass with a clean dry soft cloth.

6 Enter the following information into the maintenance log: date and name of person and company who performed the maintenance service.

7 Turn on the detector.

8 Perform zero calibration.

Technical Support

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