WinHost Configuration and Diagnostic Software

Xenon 700 SIL2, DUCT 300 SIL2, and Quasar 950/960 SIL2 Gas Detectors

User Guide

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TM899050 Rev. (Fb), March 2019

Table of Contents

List of Figures

List of Tables

1 About this Guide

This guide describes the SafEye SPECTREX WinHost configuration and diagnostic software for Xenon 700, Duct 300, and Quasar 950/960 gas detectors and their 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 Documents

- **TM799200**, SafEye Xenon Open Path IR Gas Detector 700 Series User and Maintenance Manual
- **TM794200,** SafEye DUCT Open Path IR Gas Detector 300 Series User and Maintenance Manual
- **TM888300,** Quasar 950/960 Open Path UV Gas Detector User and Maintenance Manual

1.2 Release History

Rev	Date	Revision History	Prepared by	Approved by
B	February 2012	First Release	Jay Cooley	Shaul Serero
D	December 2014	Second Release	Jay Cooley	Shaul Serero
E	December 2014	Third Release	Jay Cooley	Shaul Serero
Fa	November 2017	Fourth Release	Jay Cooley	Shaul Serero
Fb	March 2019	Fifth Release	Eyal Ben Arzi	Dimitriy Grigorovitch

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 WinHost T89960 is communication software for SafEye Xenon 700, DUCT 300, and Quasar 950/960 SIL2 family detectors. The program displays information (such as status, model, gain, address, signals, LEL/PPM, etc.), and makes it possible to change the detector's configuration.

2.1 Software Overview

The WinHost software makes it possible to:

- Communicate with SafEye Xenon 700, DUCT 300, and Quasar 950/960 gas detectors
- Read status and parameters from the detector
- Change the detector's address
- 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 WinHost configuration and diagnostic software:**

  1. Copy the SafEye installation files into the correct drive.
  2. Start the SafEye 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 11).
  5. Start the SafEye WinHost software with the specified COM port number as a parameter (see *Establishing the COM Port* on page 13)

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:**

  - **For DUCT 300**:
    - **a** Connect one side of the cable to detector Terminal 13 for RS-485 (+).
    - **b** Connect the other side of the cable to detector Terminal 14 for RS-485 (-).
  - **For Gas 700, 950, and 960**:
    - **a** Connect one side of the cable to detector Terminal 5 for RS-485 (+).
    - **b** 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:
   - **Option 1**:

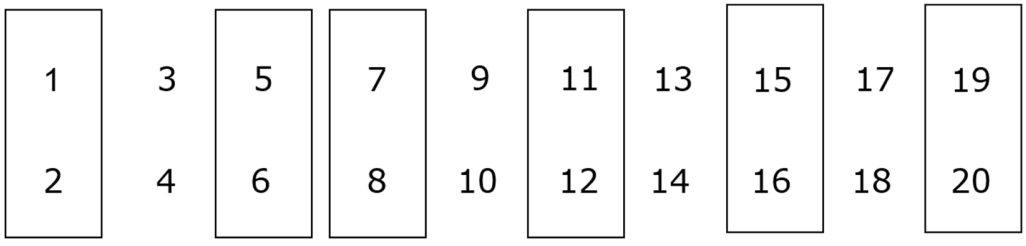


Figure 1: USB Adapter Setup Option 1

- **Option 2**:

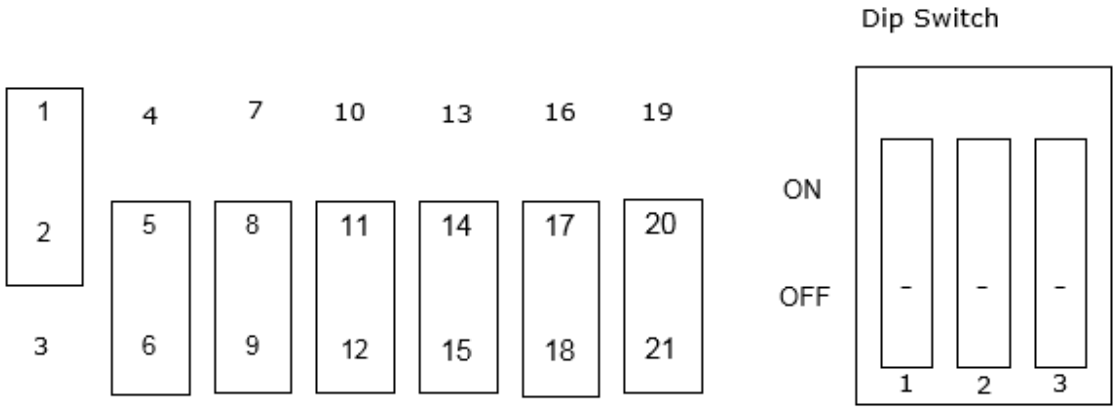


Figure 2: USB Adapter Setup Option 2

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. This section describes how to establish the COM port used by the adapter.

- **To view the COM port used by the adapter:**
  - Select **Start** > **Settings** > **Control Panel** > **System** > **Hardware** > **Device Manager**.

    The COM port number is displayed. This is the COM port number you will use.

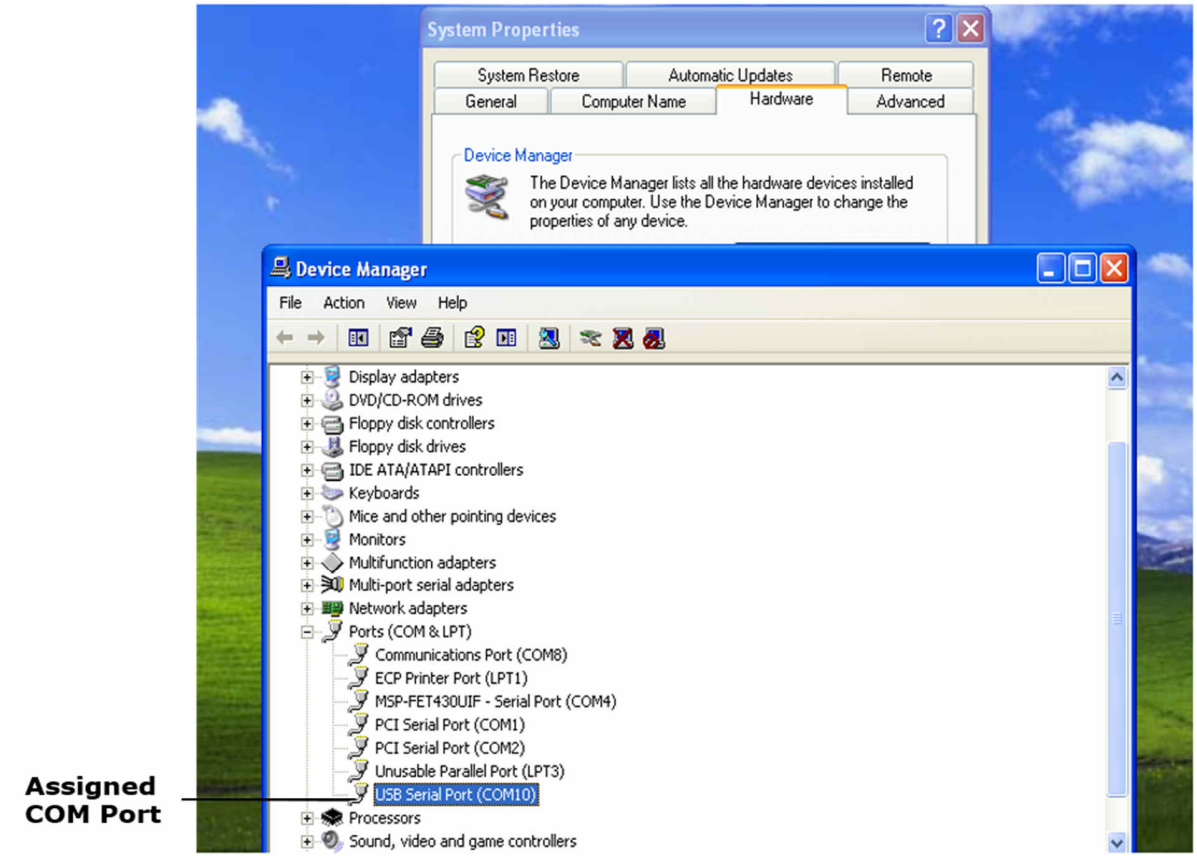


Figure 3: COM Port Number

4.3 Running WinHost

This section describes how to run the WinHost software.

- **To run the WinHost software:**

1 Select **Start** > **Programs** > **T89960**

The WinHost software application runs and the opening window appears:

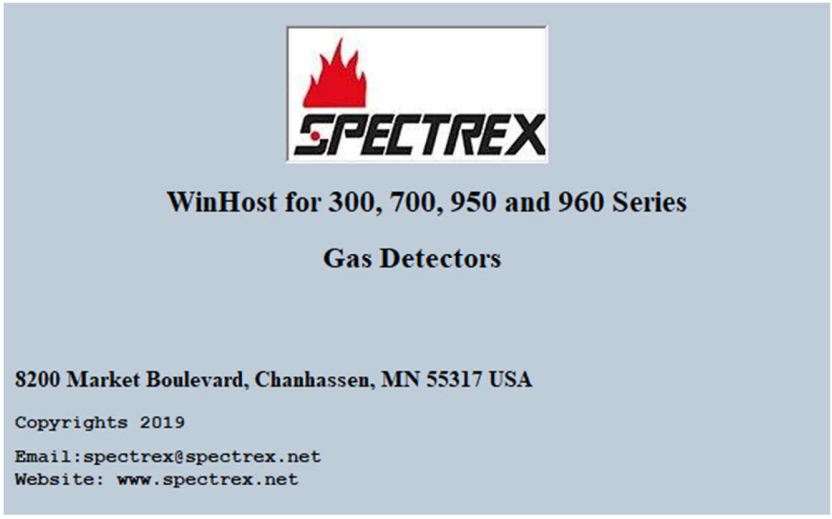


Figure 4: Opening Window

After a few seconds, the opening window disappears and the communication setup dialog box appears. The communication setup dialog box allows the user to select the communication port number.

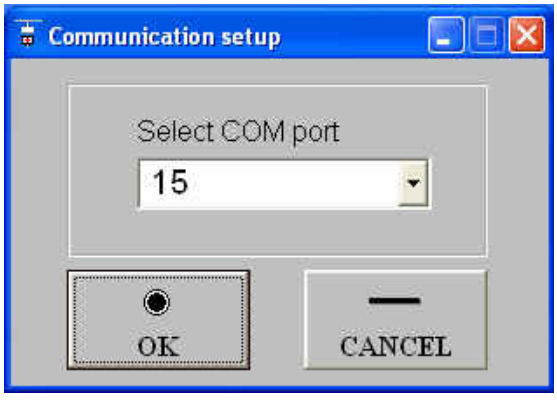


Figure 5: Communication Setup Dialog Box

2 From the drop-down menu, select the assigned communication port number (see *Establishing the COM Port* on page 13)

3 Click **OK**.

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.

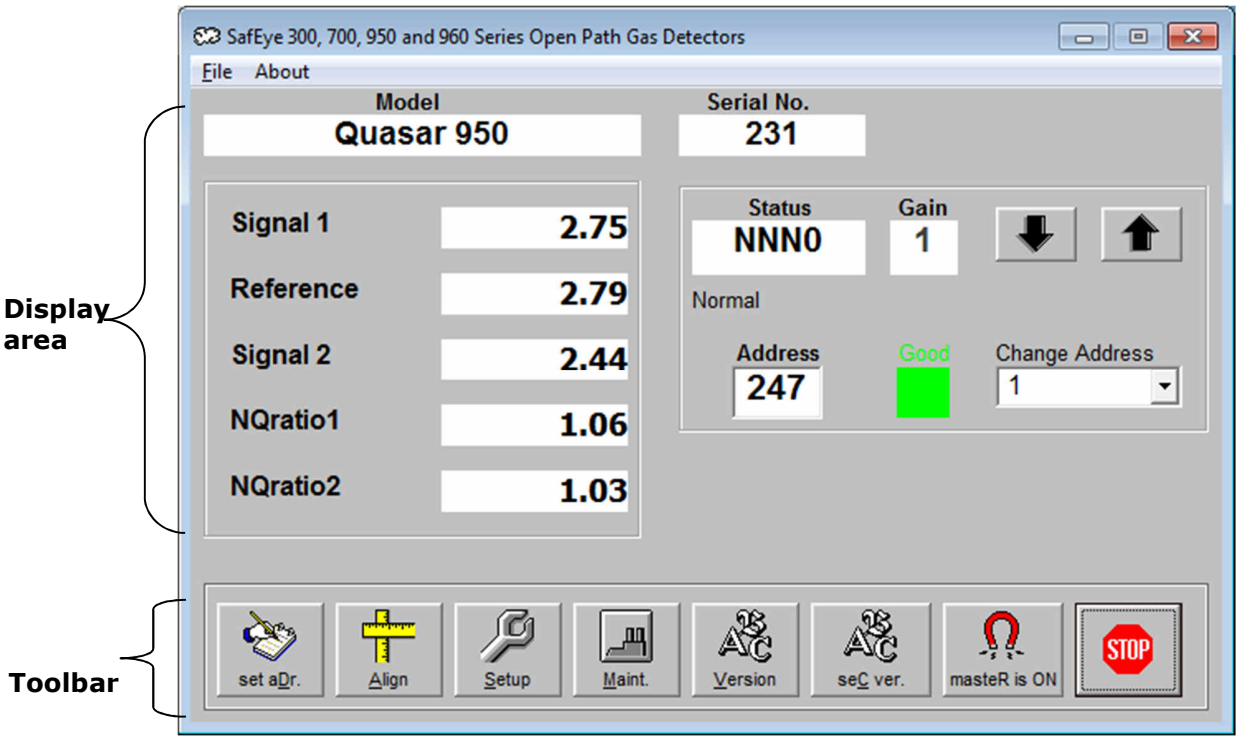


Figure 6: Main Window

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
	Indicates the status of the communication between the detector and the computer.
Address	The address currently being looked at by the software. You can change the current address by using the up and down arrows.
Serial No.	The serial number of the detector. Each detector has a unique serial number.
Model	The detector model.
Status	The current operational status of the detector.
Gain	Electronic amplification.
Signal1 Signal2 Reference NQratio1 NQratio2	See Table 14.
Change Address	A drop-down list that enables you to select at which address location to seek the detector.
About	Opens a window that gives software version information.

5.1.2 Toolbar Buttons

Table 2 describes the buttons on the toolbar.

Table 2: Main Window Toolbar Buttons

Button	Button Name	Description
	Master	Seeks the address of the connected detector (from 1 to 247).*
	Align	Aligns the detector with the source.
	Maint	Opens the maintenance window. See *Maintenance Window* on page 25.
	New Address	Opens a dialog box that enables you to set a new address location for the detector. See *New Address* on page 24.
	Setup	Opens a dialog box that enables you to configure the detector. See *Setup Table Window* on page 19.
	Primary micro software	Displays the version and details of the primary micro software. See *Viewing Micro Software Versions* on page 27.
	Secondary Micro Software Version	Displays the version and details of the secondary micro software. See *Viewing Micro Software Versions* on page 27.
	Stop	Closes the application.

* 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
NNN0	Normal	Normal
BBBN0		Normal operation during interference
OMN0		Maintenance call for low signal or ratio
PPP74	Fault	Parameters fault
VVV83		Low voltage
FFF34, 35, 36		High noise
OON0		Obscuration, saturation, or low signal
QQN0		Wrong alignment (only for 950/960)
DDD0		Disconnection
AAN0	Alarm	Alarm
WWN0	Warning	Warning
XXX0	Alignment	Align
SSY0		Startup/standby
GGG0		Zero calibration

5.2 Setup Table Window

This section describes the setup table window and the various parameters that you can define. The setup table window allows the user to view and program the various detector functions. Figure 7, Figure 8, and Figure 9 show the setup table window for the various models.

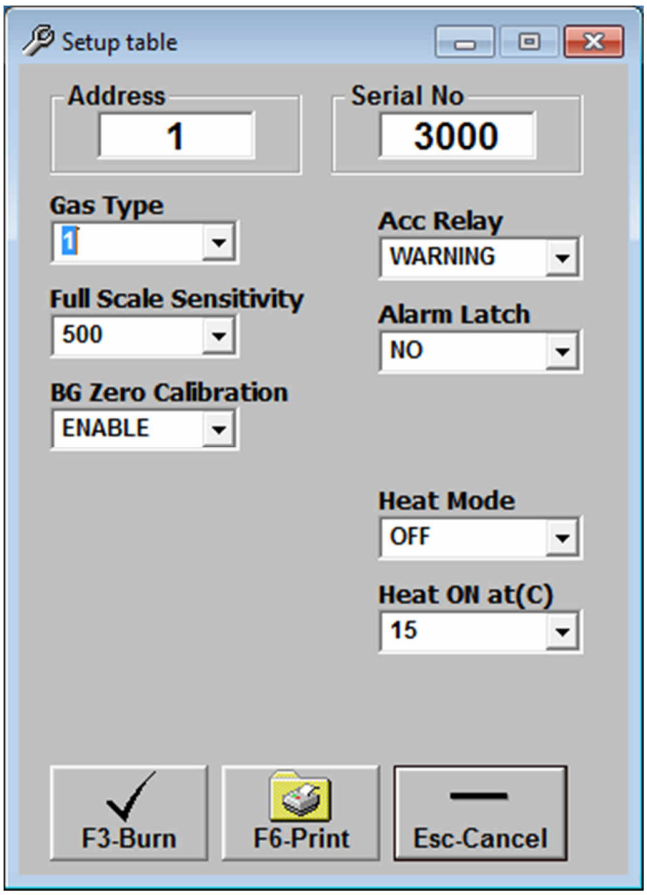


Figure 7: Setup Table Window (Xenon 700)

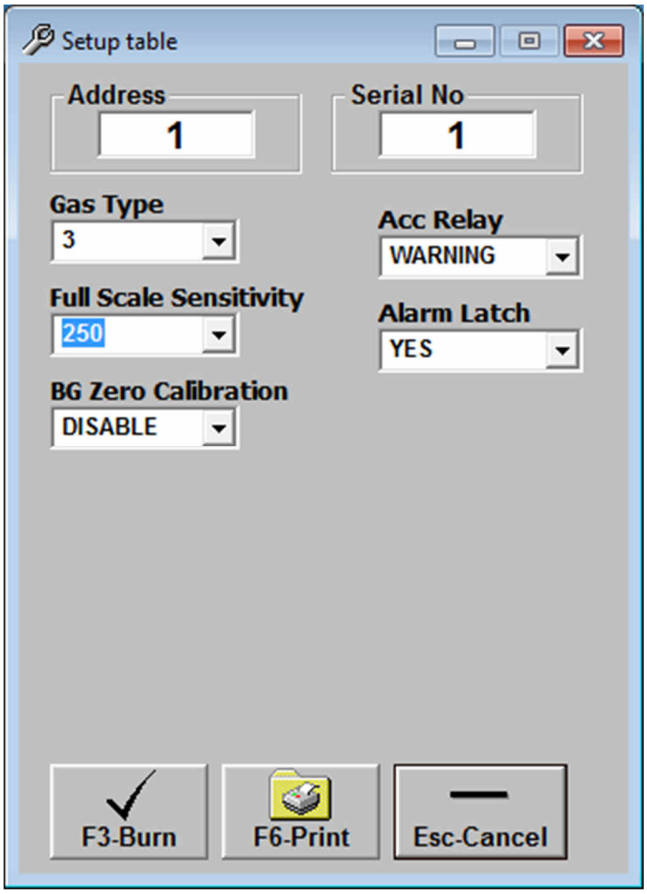


Figure 8: Setup Table Window (DUCT 300)

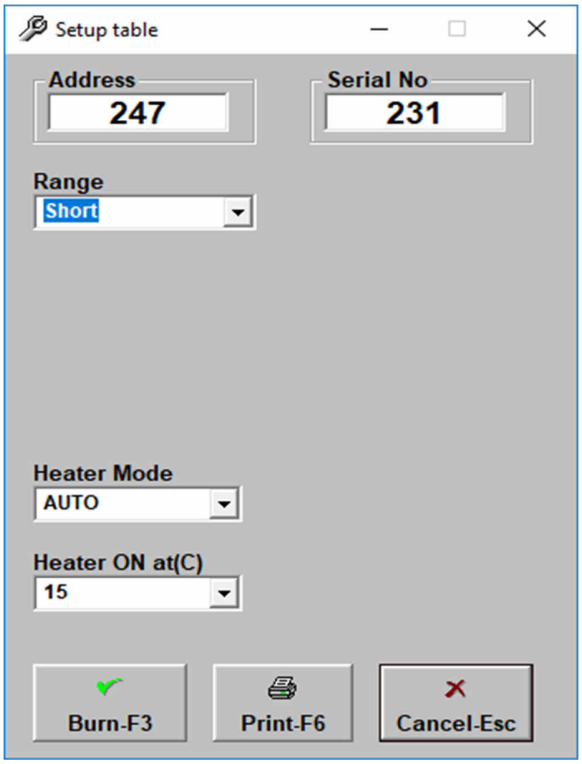


Figure 9: Setup Table Window (Quasar 950/960)

- **To configure the detector:**

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.

- **To define the new setup configuration**

  - Click **F3-Burn**.

5.2.1 Setup Table Parameters

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

5.2.1.1 Gas Type

Table 4: Gas Type (Xenon 700 and Duct 300)

Gas Type	Description
1	100% methane
2	92% methane + 4% propane + 4% ethane
3	60% propane + 40% butane
4	99% methane + 1% propane

Table 5: Gas Type (Xenon 700 - Models 721, 722, and 723)

Gas Type	Description
Ethylene	For Xenon ethylene (read only)

Table 6: Range (Quasar 950/960)

Range	Description
Short	For short range
Medium Long	For medium/long range

5.2.1.2 Full Scale Sensitivity

Table 7: Full Scale Sensitivity (Xenon 700 and Duct 302)

Sensitivity Level	Value
Low	500 - full scale
High	200 - full scale

Table 8: Full Scale Sensitivity (Duct 301)

Sensitivity Level	Value
Low	250 - full scale
High	100 - full scale

5.2.1.3 Background Zero Calibration

Table 9: Background Zero Calibration (Xenon 700 and Duct 300)

Parameter	Description
Enable	Enable background zero calibration
Disable	Disable background zero calibration

5.2.1.4 Accessory Relay

Table 10: Accessory Relay (Xenon 700 and Duct 300)

Parameter	Description
Warning	Accessory relay as warning relay
Alarm	Accessory relay as alarm relay
EOL	Accessory relay as EOL

5.2.1.5 Alarm Latching

Table 11: Alarm Latching (Xenon 700 and Duct 300)

Parameter	Description
YES	Latching in alarm state
NO	No latching in alarm state

5.2.1.6 Heater Mode

Table 12: Heater Mode (Xenon 700 and Quasar 950/960)

Parameter	Description
OFF	Heater always in off mode
AUTO	See notes below
ON	Heater always in on mode

Table 13: Heater ON (Xenon 700 and Quasar 950/960)

Temperature (˚C)
0
5
10
15
20
25
30

Notes:

The heater functions automatically according to the following conditions:

- If the ambient temperature level is below the **Heater ON at (C)** parameter plus 10ºC, the heater turns on.
- If the ambient temperature is higher than the sum of **Heater ON at (C)** 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 10 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 **F3-Burn**.

   The new address is set.

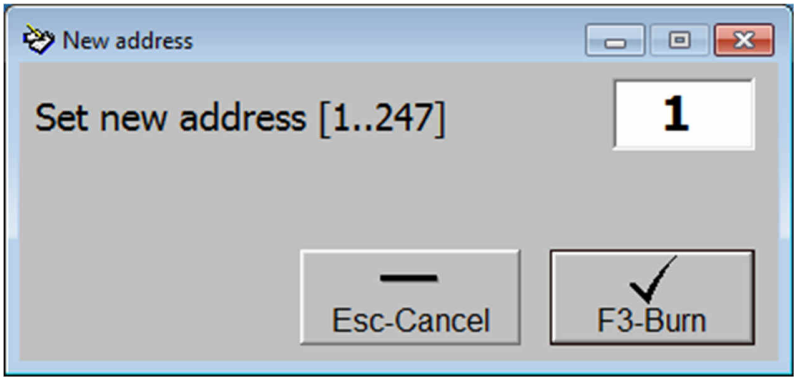


Figure 10: New Address Dialog Box

5.4 Maintenance Window

The maintenance window allows the user to see the detector's various realtime data channels. In this window, the user can also check the signals/noise values and the alignment of the detector.

- **To view the detector's various real-time channels:**

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

    The maintenance window appears.

    Figure 11 shows the maintenance window:

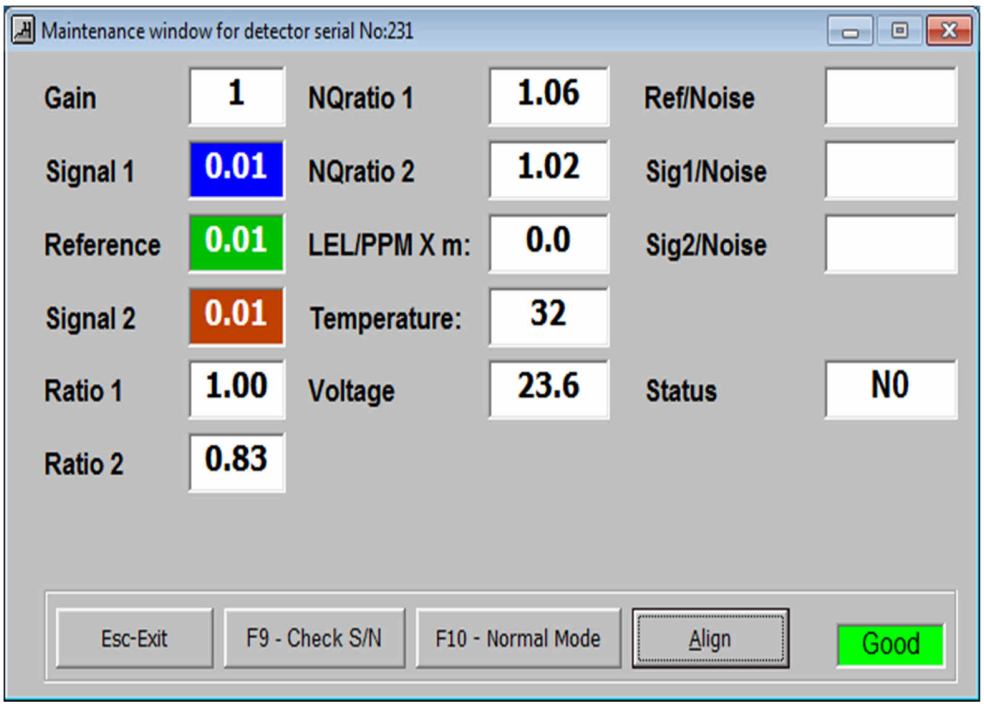


Figure 11: Maintenance Window

The maintenance window contains the following elements:

Table 14: Maintenance Window Elements

Parameter	Description
Gain Level	Electronic amplification.
Reference	Voltage signal of reference after electronic amplification.
Signal 1	Voltage signal of Sensor 1 after electronic amplification (depends on gain).
Signal 2	Voltage signal of Sensor 2 after electronic amplification (depends on gain).
Ratio 1	Ratio between Sensor 1 and reference.
Ratio 2	Ratio between Sensor 2 and reference.
NQratio 1	Ratio1 / QO1 (Normalized ratio1). Equals 1 when no gas is present and goes down when gas is introduced.
NQratio 2	Ratio1 / QO2 (Normalized ratio2) Equals 1 when no gas is present and goes down when gas is introduced.
LEL x m	Lower Explosion Level by meter.
Temperature	The temperature inside the detector in °C.
Voltage	Detector voltage.
Ref/Noise	Reference / Noise
Sig1/Noise	Signal1 / Noise
Sig2/Noise	Signal2 / Noise
Status	Current status (see Table 3).
Esc - Exit	Exits the window.
F9 - Check S/N	Checks signals to noise.
F10 - Normal Mode	Cancels the S/N check and returns to normal operation.
Align	Aligns the detector with the source.
Good	Communications status.

5.4.1 Checking Signals-to-Noise

You can check signals-to-noise from the maintenance window (only for Xenon 700 and Quasar 950/960).

- **To check signals–to-noise:**

  - From the maintenance window, click the **F9 - Check S/N**.

    The signals/noise values appear on the **Ref/Noise**, **S1/Noise**, and **S2/Noise** fields.

Note:

You can revert to normal operation at any time by clicking **F10 - Normal Mode.**

5.5 Viewing Micro Software 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 12: 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 13: Secondary Micro Version

5.6 Logging Detector Events

You can use the computer with the WinHost software to log the events of the detector for diagnostic and other purposes.

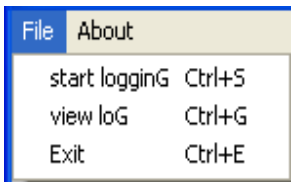
When you start logging, set the log file period in seconds. A line is subsequently written to the log whenever that number of seconds passes (for example, every 60 seconds) and whenever there is a change in the detector's status.

Each line in the log notes the following information:

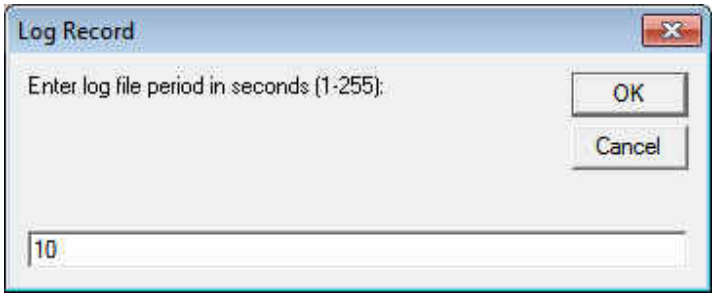
- The detector temperature
- The detector gain
- The detector status
- The date and time
- The detector data (see Table 14)

- **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.

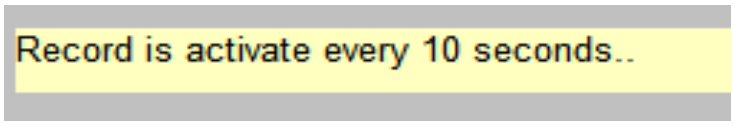
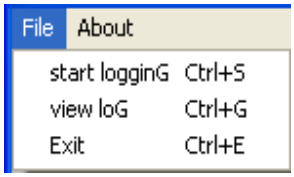


Figure 14: Log File Record Message

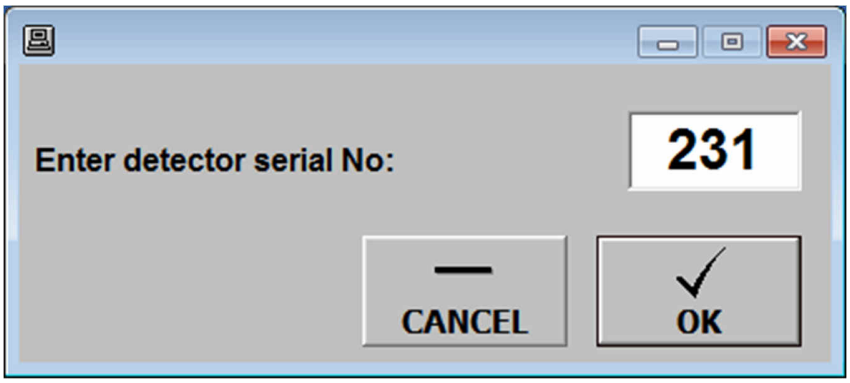
5.7 Viewing the Log File

- **To view the log file:**

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

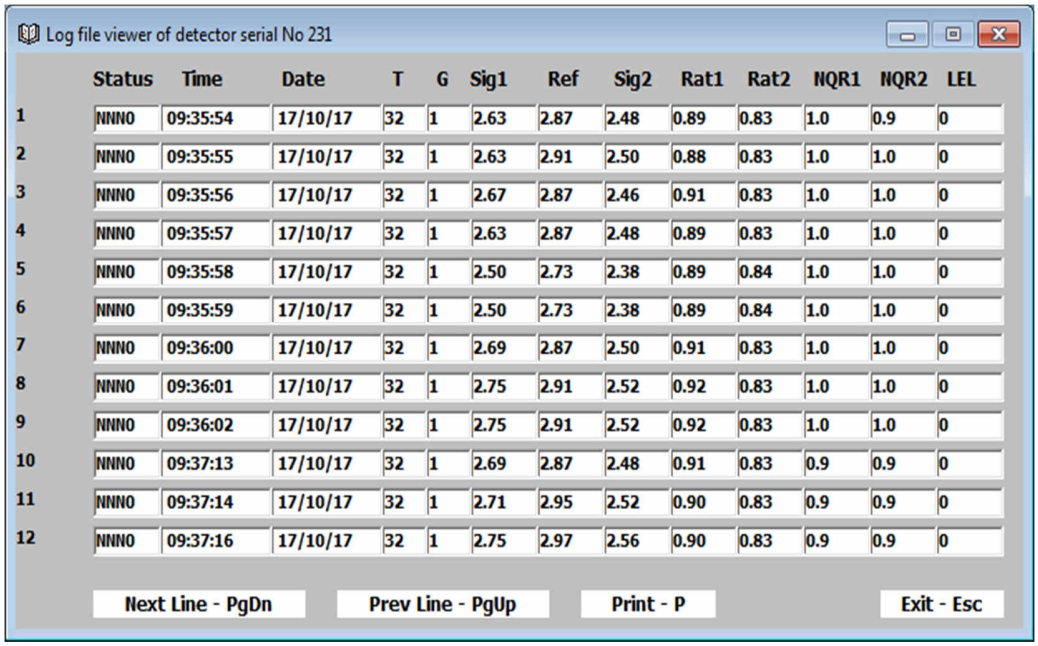


The log file viewer dialog box appears:



2 In the text field, enter the detector's serial number, and click **OK**.

The log file viewer window appears:



	Status	Time	Date	T	G	Sig1	Ref	Sig2	Rat1	Rat2	NQR1	NQR2	LEL
1	NNN0	09:35:54	17/10/17	32	1	2.63	2.87	2.48	0.89	0.83	1.0	0.9	0
2	NNN0	09:35:55	17/10/17	32	1	2.63	2.91	2.50	0.88	0.83	1.0	1.0	0
3	NNN0	09:35:56	17/10/17	32	1	2.67	2.87	2.46	0.91	0.83	1.0	1.0	0
4	NNN0	09:35:57	17/10/17	32	1	2.63	2.87	2.48	0.89	0.83	1.0	1.0	0
5	NNN0	09:35:58	17/10/17	32	1	2.50	2.73	2.38	0.89	0.84	1.0	1.0	0
6	NNN0	09:35:59	17/10/17	32	1	2.50	2.73	2.38	0.89	0.84	1.0	1.0	0
7	NNN0	09:36:00	17/10/17	32	1	2.69	2.87	2.50	0.91	0.83	1.0	1.0	0
8	NNN0	09:36:01	17/10/17	32	1	2.75	2.91	2.52	0.92	0.83	1.0	1.0	0
9	NNN0	09:36:02	17/10/17	32	1	2.75	2.91	2.52	0.92	0.83	1.0	1.0	0
10	NNN0	09:37:13	17/10/17	32	1	2.69	2.87	2.48	0.91	0.83	0.9	0.9	0
11	NNN0	09:37:14	17/10/17	32	1	2.71	2.95	2.52	0.90	0.83	0.9	0.9	0
12	NNN0	09:37:16	17/10/17	32	1	2.75	2.97	2.56	0.90	0.83	0.9	0.9	0

Figure 15: Log File Viewer

5.8 Viewing WinHost Software Version

The about window displays the WinHost software version information.

- **To access the about dialog box:**
  - From the main window drop-down menu, click **About.**

    The about dialog box appears:

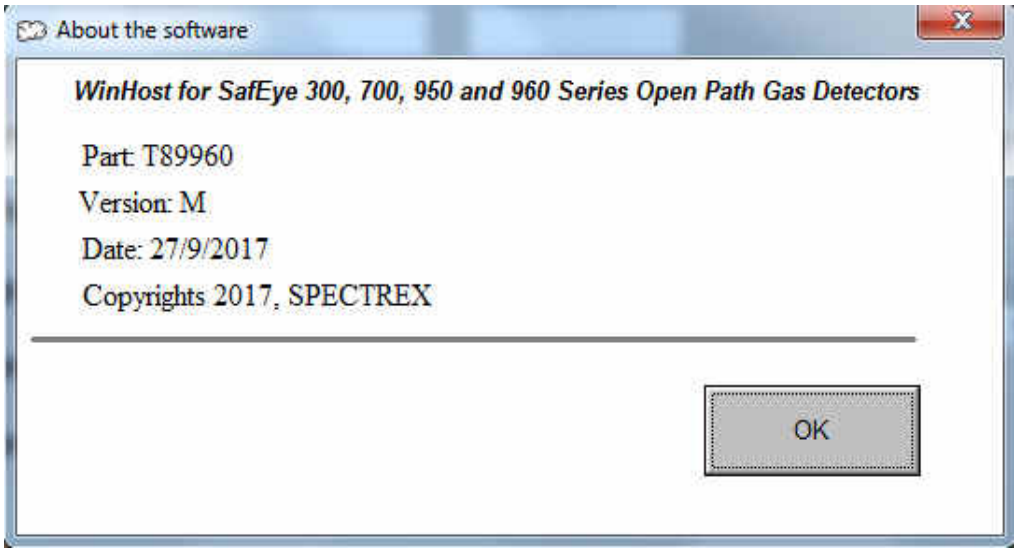


Figure 16: About Dialog Box

6 Maintaining Your Detector

The SafEye Gas Detector 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 6 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

For technical assistance or support, contact:

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