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FRC

A Safe Fleet Brand

SEAT MONITOR

SEAT MONITOR AND
DATA ACQUISITION SYSTEM

USER GUIDE

The SBA document set includes the following:
SBA1GD General Description
SBA1HM Hardware Manual
SBA1UG User Guide
SBA2DC Data Collector Manual
SBA2EM OEM Guide

HAWK
FROM FIRE RESEARCH CORP.

Proprietary
Software

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Glossary of Terms

Pairing

> **Note:** A VDR shall not be paired until the vehicle is delivered and the pairing process is carried out using the end users copy of HAWK software.

This process establishes a permanent association between the copy of HAWK software that is loaded on the end users computer and the vehicle VDR. Stored data from the VDR can only be uploaded and saved to this copy of HAWK software.

Paired Vehicle VDR

The VDR is secured so that the program and stored data is only accessible by personnel authorized by the end user. A paired VDR has the vehicle name, vehicle identification number, and the end users password embedded into its memory.

Unpaired Vehicle VDR

A new VDR that has not been associated with a copy of HAWK software. An unpaired VDR can be accessed using HAWK OEM software to upload programming.

INTRODUCTION

This User Guide includes the information needed to use the Seat Monitor and Data Acquisition System data management software. It includes the HAWK Software installation, setup, and how to instructions for collecting and managing data.

Refer to the General Description (SBA1GD) for overall system information; the Hardware Manual (SBA1HM) for hardware specifications, mounting instructions, and wiring; the User Guide (SBA1UG) for HAWK software installation, set-up, and how to instructions for the data management software; the Data Collector Manual (SBA2DC) for instructions on using the FRC portable data collector; the OEM Guide (SBA2EM) for information needed by body builders, dealers, and service personnel to use the body builder/service programs in HAWK.

Overview

The HAWK data management software is provided on a CD-ROM and needs to be installed on laptop or a personal computer. It is used to upload, store, sort, and display data collected from the Vehicle Data Recorder. The HAWK software allows for multiple vehicle profiles and provides custom reports that meet NFPA 1901 requirements.

The Seat Monitor and Data Acquisition System is available with four different Seat Monitor Display modules. The simplest model has six seat belt icons and a silence button for the audible alarm. More complex models will include a message display, push buttons for navigating through programs, vehicle system warning indicators, and the lateral acceleration indicator.

The Vehicle Data Recorder (VDR) houses the on-board computer and software, the hardware for all system interconnections, and the wireless or USB interface. It is capable of processing input data from the vehicle J1939 CAN Bus, the data link, or separate hard-wired inputs. The VDR communicates via the proprietary FRC datalink with the system modules.

The Seat Monitor and Data Acquisition System consist of the following components:

Seat Monitor Display Module

Vehicle Data Recorder (VDR)

Lateral G Sensor Module (SBA100 Models Only)

Datalink Terminating Resistor

Cables

Wireless Interface Module

Data Collector

HAWK Data Management Software

The Data Collector, the Wireless Interface Module, and the HAWK Software are not mounted on the vehicle. All communications between the wireless VDR and the Data Collector or a computer are accomplished via wireless technology. All communications between a VDR with the USB interface and a computer are via a USB cable.

HAWK Software

This section describes some features of the FRC HAWK data management software.

HAWK software is provided on a CD and must be loaded on a laptop or personal computer. All components of the data management package must be loaded for HAWK to work correctly. The software must be installed onto the computer hard drive, it will not run from the CD drive.

The Install HAWK Software Section gives some descriptions of the HAWK data management software and step by step procedures of how to install it.

Administrator rights on the computer are required to install the HAWK data management software.

HAWK Software Features

All Data is Password Protected

Stores Data from Multiple Vehicles

Sorts and Displays Stored Data

Displays and Prints Reports

Secures All Paired Vehicle Data Recorders

Allows for Multiple Users with Different Levels of Access

Computer System Requirements

To install and use HAWK software your computer should meet the following system requirements for optimum performance:

Windows XP® (Service Pack 3 or Newer); Windows Vista® Operating Systems

Intel or Compatible Pentium IV 2.0 GHz or Faster Processor

Minimum of 256 MB of RAM (512 MB or more is Recommended)

5 GB of Available Hard-Disk Space

CD-ROM Drive

USB 2.0 Type-A Receptacle

Screen Resolution Minimum: 1024 by 768

Registration

So that we can keep you informed of new HAWK software developments please register on the FRC web site.

www.fireresearch.com/hawk.php

Technical Support

FRC sales, service, and technical support representatives are ready to assist you with any questions you might have on this product. [1.800.645.0074]

Before calling for technical support, refer to the Troubleshooting Section in this User Guide. This section offers instructions and will help you determine if a call is necessary.

Visit the FRC web site for information on the Seat Monitor and Data Acquisition System.

www.fireresearch.com/seatmonitor

HAWK Software Components

HAWK software is an integral part of the Seat Monitor and Data Acquisition System. It includes everything needed to interface with the VDR, retrieve, store, display recorded data, and create reports.

The HAWK CD-ROM includes the HAWK Data Management Software, additional software programs, drivers, and utilities.

The following are automatically installed if needed from the HAWK CD:

Windows Installer 4.5

Windows Installer provides a standard foundation to help make software installation, maintenance, and uninstallation straightforward and easy.

Microsoft® .NET Framework 3.5 SP1 v2

The Microsoft .NET Framework is used as one of the building blocks for HAWK. It supports the graphical interface for the user such as menus, selection buttons, and forms.

Windows 8 Note: Windows 8 needs to download the .NET Framework 3.5 from Microsoft therefore an internet connection is required. This step required for Hawk to work.

Microsoft® SQL Server

Microsoft SQL Server 2008 Express R2 SP1 is installed. It provides the database used by HAWK. Raw data is uploaded from the vehicle data recorder and stored in the database. The data is then available for HAWK to use in creating reports.

Data Management Software

This is menu driven software. It is used to upload, store, sort, and display the data collect from the vehicle data recorders. It also provides for various reports to be generated and printed.

Wireless Interface Module Driver

A driver is installed for the FRC Wireless Interface Module and Data Collector. The FRC USB Driver v6.4 is included with the HAWK software package. After installing the software the wireless interface is plugged into a UBS port on the computer.

INSTALL HAWK SOFTWARE

The information in this section describes the process for installing the HAWK data management software using the HAWK setup wizard.

1. Close all open programs.

2. Insert the HAWK CD in the CD ROM drive.

3. The HAWK Setup screen automatically opens ready to install any missing components that are necessary for HAWK to run. Click on the Install button.

4. The Setup Wizard screen opens. Follow the instructions in each window to complete the software installation.
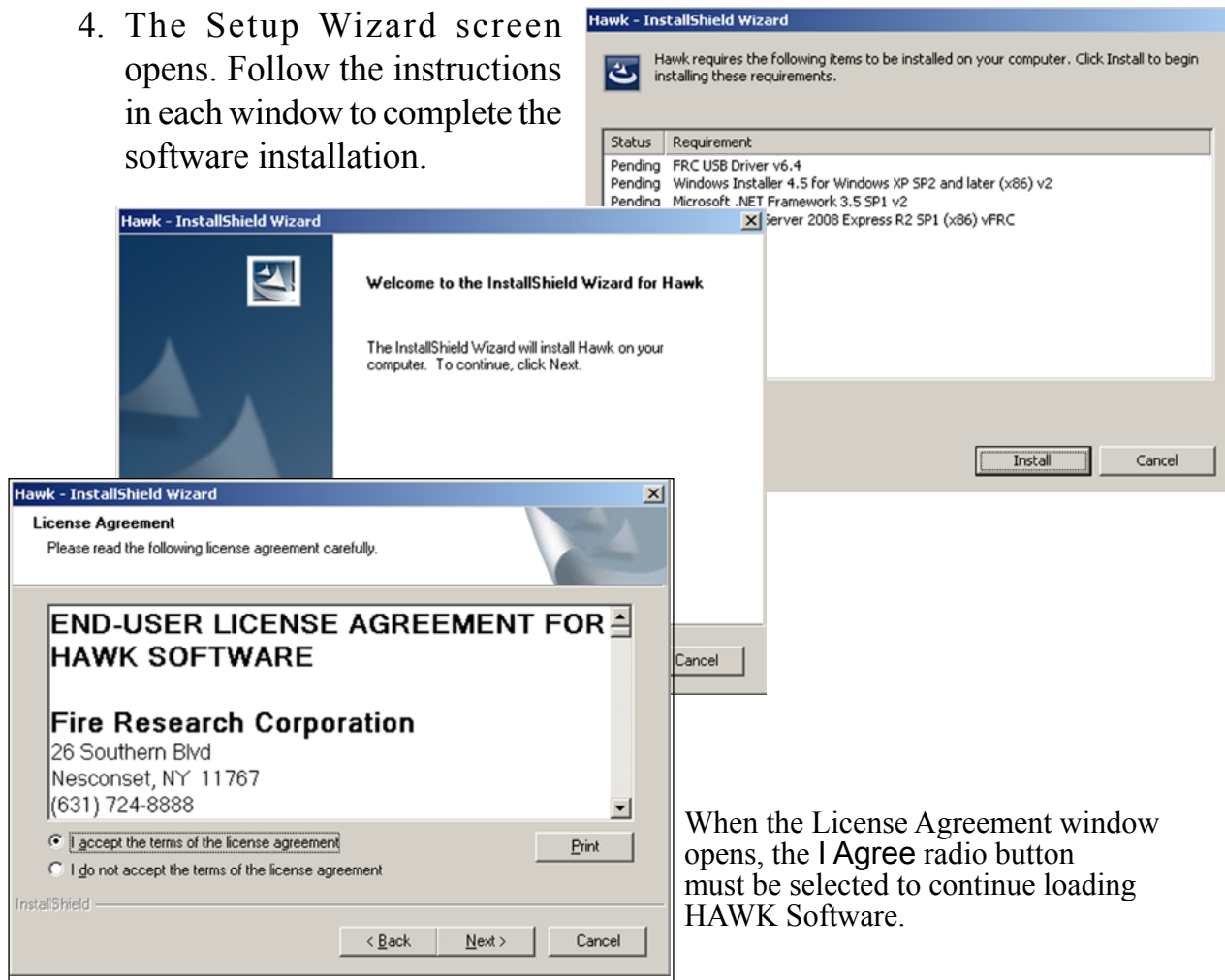
When the License Agreement window opens, the I Agree radio button must be selected to continue loading HAWK Software.

If you are not an end user DO NOT select the Fire Department radio button. For OEMs and Dealers: Refer to the OEM Guide.
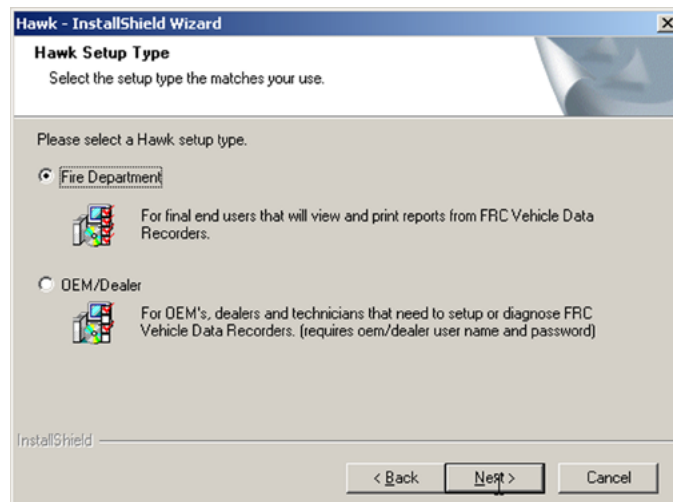
HAWK Passwords

HAWK user names and passwords are case sensitive.

The User Name and Password entered when loading HAWK for the first time identifies the administrator of the HAWK Data Management Software. Additional users are added once HAWK is completely loaded. The User Name and Password are used to log in when the HAWK Login window opens after the installation is complete.

The VDR password ensures that only authorized users are able to access the data recorded by a paired Vehicle Data Recorder.

Note: It is critical that a record is kept of the HAWK Administration User Name and Password, and the Vehicle Data Recorder Administration Password. These should be stored safely for future reference if needed.

When reinstalling HAWK a new administrator user name and password can be created but, the original Vehicle Data Recorder Administration Password must be used.

If you are not an end user DO NOT enter data here. Refer to the OEM Guide.

The user name and password of the administrator for this loading of HAWK software is set at this time.

All user names and passwords entered in the HAWK software are case sensitive.

The Vehicle Data Recorder Administration Password is entered next. This password is extremely important for security of the data recorded and stored by the VDR.

This password is passed to each VDR that is paired to this version of HAWK software and it locks the paired VDR to this copy of HAWK so that only authorized users are able to access the data.

A copy of this password should be kept in a safe place, it would be needed in the event of a software reinstall. This password will not be asked for or displayed again.

HAWK BASICS

The HAWK software, the paired VDRs, and all stored data are secured and access is limited to established users.

The HAWK data management software is password protected. Access is controlled by the system administrator. A profile is setup for each user. This establishes the users name and password, and sets permissions for program menu access. The profile is setup by opening the Users tab and filling in a form.

The recorded data stored in each VDR is also password protected. The password is set once the VDR is paired with the owners copy of HAWK software. The Vehicle Data Recorder Administration Password is passed from HAWK to the VDR during the pairing process and locks the paired VDR to the owners copy of HAWK. Only users with the correct permissions are able to access the VDR data.

Opening HAWK

Locate the HAWK logo on the desktop or in the quick launch portion on the task bar of the computer and double click it to launch the login box.

If a shortcut was not created on the desk top or on the task bar, open the computer start menu. Scroll the programs directory and find FRC. Click on HAWK to launch the login box.

First Time Login

Note: The User Name and Password are case sensitive.

The first time HAWK is opened, the only user set up for access to the system is the administrator. This is the User Name and Password that was entered on the HAWK User Information form during the installation.

Type in the administrators user name and password then click on the OK button. The HAWK software main window opens. Once the administrator has access to HAWK, other user profiles can be added. This is accomplished by filling in the Users form. (Refer to Users Tab.)

Standard Login

Note: The User Name and Password are case sensitive.

When the HAWK Login box is launched, the software is ready to go. To open the data management program enter a valid User Name and Password then click on the OK button and HAWK software main window opens.
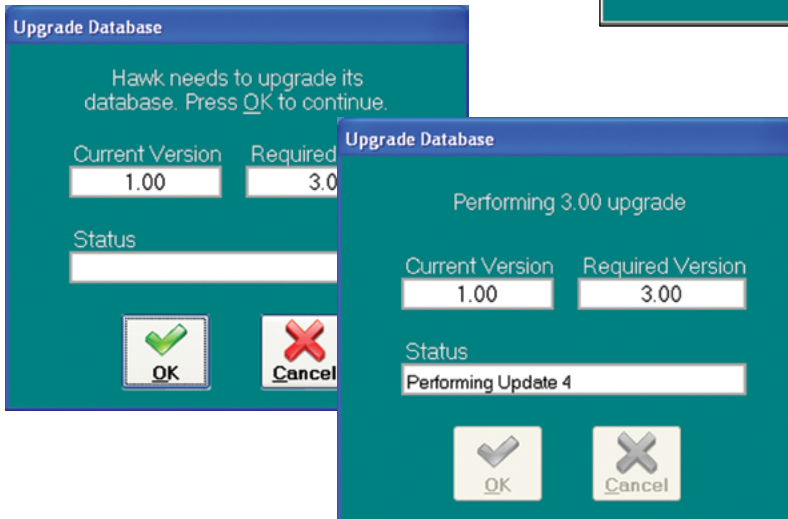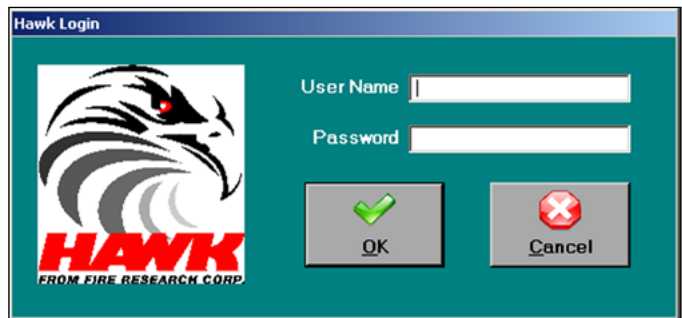
Upgrade the Database

When needed HAWK is automatically set to upgrade the database and a menu opens. This upgrade does not remove, change, or effect in any way the data stored in the database.
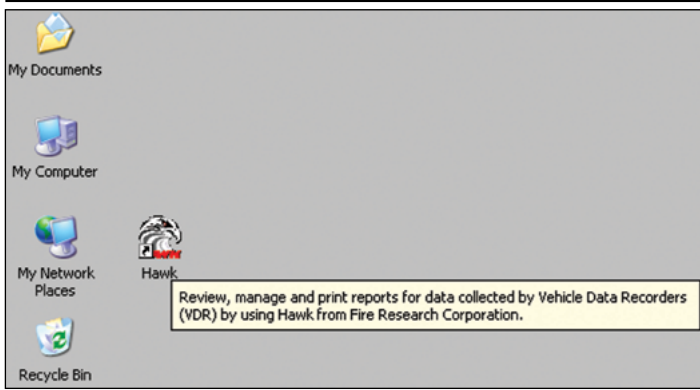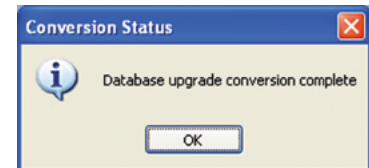
Click on the HAWK logo
to open the program.

HAWK Login box opens.
Type a User Name and Password.
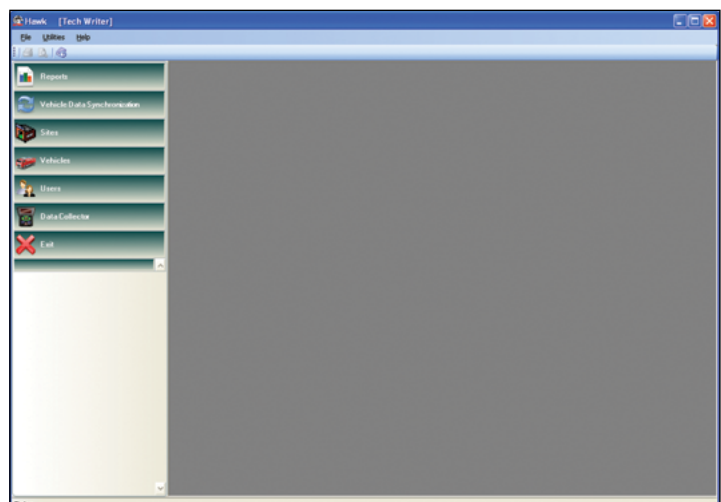Click on the OK button

The HAWK Login Users Name
and Password are case sensitive.

When needed HAWK
upgrades the database.

HAWK software main window
opens with the program menu
tabs on the left side.

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Starting Out

The HAWK data management software is menu driven. There are seven program menu tabs. When a menu tab is clicked on with the mouse, a directory is revealed. Click on the ⊞ button to open the directory. Directories contain folders that provide access to upload data from the VDR, generate reports, and edit forms.

Menu Tabs

The program menu tabs are located down the left side of the window. Clicking on a menu tab opens it and allows access to the directories and folders associated with that tab. If the tab does not open, the logged in user does not have permission to view the directories under that tab.

There are seven program menu tabs, Reports, Vehicle Data Synchronization, Sites, Vehicles, Users, Data Collector, and Exit.

The Reports tab is used for reviewing stored data. The Vehicle Data Synchronization tab provides the interface needed to communicate with a VDR using the wireless interface. The Sites, Vehicles, and Users tabs are for setting up profiles. The Data Collector tab provides the interface needed to synchronize the FRC data collector with HAWK.

Menu Tab Access

Access to open menu tabs is controlled by the Menu Access settings on the Users form. Each user has a profile that is setup to establish HAWK permissions.

User Profile

The user profile for the administrator is set during the installation process by default. This user has full program capabilities to access directories and to edit all forms.

Note: If the menu tab does not open when it is clicked on, the user does not have access to view the contents associated with that menu

A profile must be setup for each additional user by entering information on the Users form. The Users form is found in the directory under the Users tab. Permission to access HAWK software, view the directories under each menu tab, to edit the associated forms, and to connect to a VDR is controlled by the user profile.

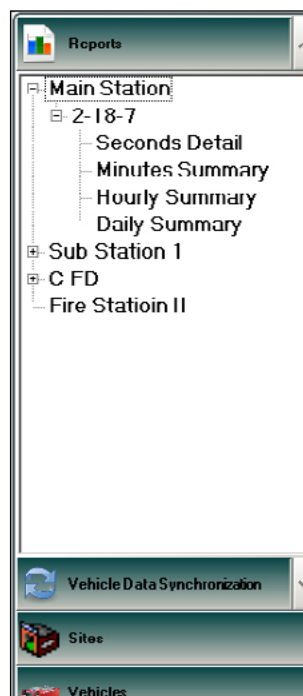There are seven program menu tabs located down the left side of the window.

Reports
Vehicle Data Synchronization
Sites
Vehicles
Users
Data Collector
Exit
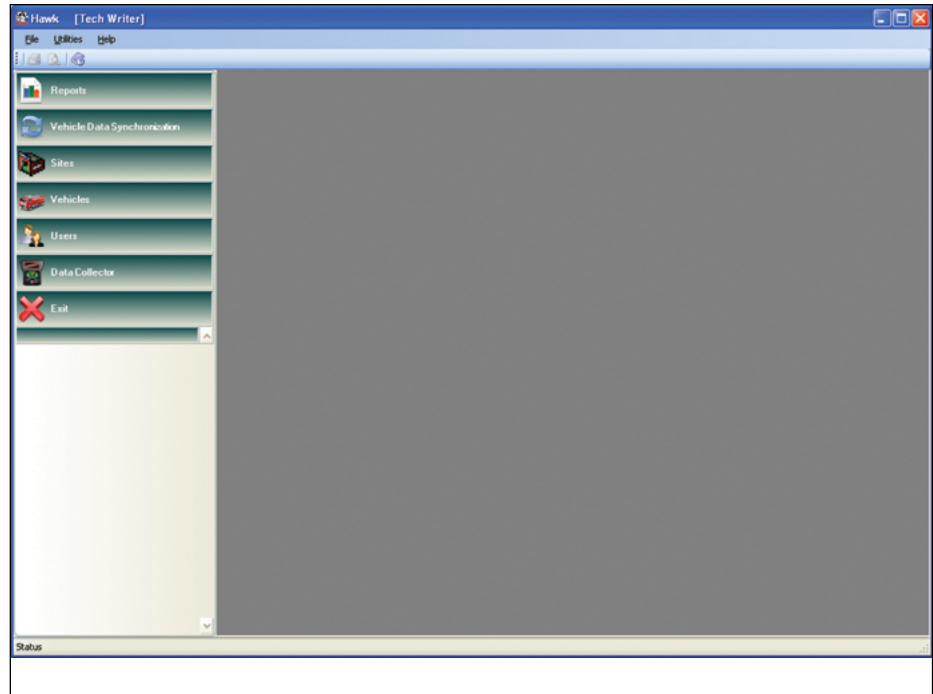
Note: If the menu tab does not open when it is clicked on, the user does not have access to view the contents associated with that menu.
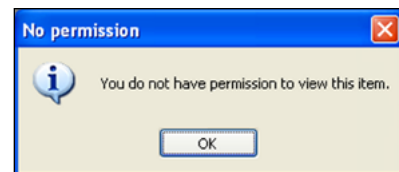
Click on a menu tab to open it and reveal a directory.

Click on the ⊞ button to open the directory and reveal the folders.

Reports Tab

The Reports tab opens a directory that list each site. When a paired vehicle is assigned to a site it appears under the Reports tab in the correct site directory. If a vehicle is paired and is not assigned to a site it is listed under the Reports tab in the Vehicles with no site directory. Paired vehicles are assigned to a site using the Site Assignment menu on the Vehicle form. This is entered when the vehicle profile form is filled out. Refer to Vehicles Tab Section.

When a site directory ⊞ button is clicked it expands to show the folders of the vehicles that are assigned to that site. In each vehicle folder there are four different types of reports available. The reports are broken down by seconds detail, minutes summary, hourly summary, and daily summary. Select one to launch the Report Criteria form.

There are multiple types of reports available. The Report Criteria form allows a user to select a specific time frame to pull stored data from when creating a report. Fine tune the report by using check boxes to choose the type of data to be included, apply filters, and select specific criteria. Once the report is generated there are tools to help manipulate and filter the data even more.

Refer to Managing Data Section, Generating Reports.

Click on the **Reports** Tab
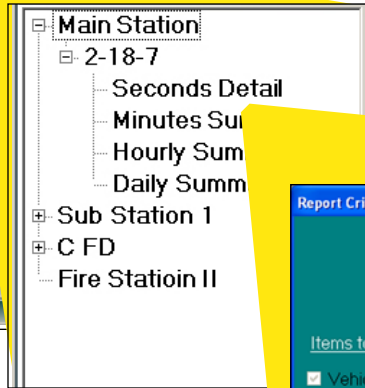
Open the site directory and then the vehicle folder. Click on the type of report desired.

Edit the **Report Criteria** form.

Information entered in the **Report Criteria** form is saved between sessions.

Information entered in the **Report Criteria** form sets parameters and filters for the summary report that is generated.
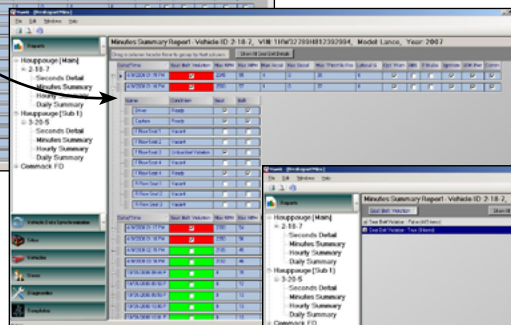
Click on the ⊞ button ...

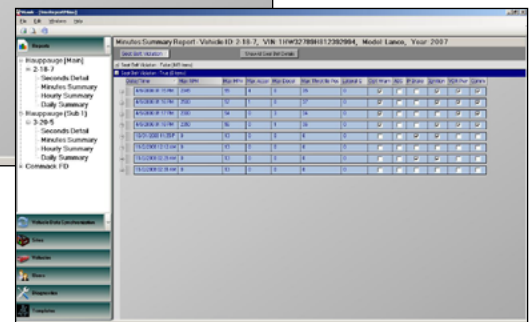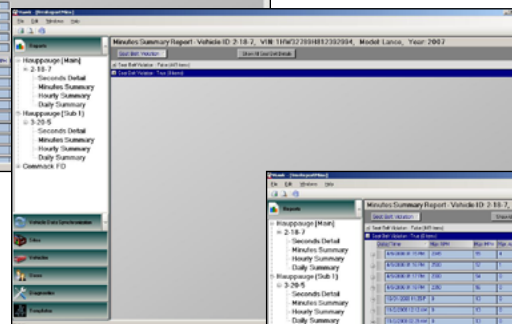... to show seat and belt details at a specific date and time.
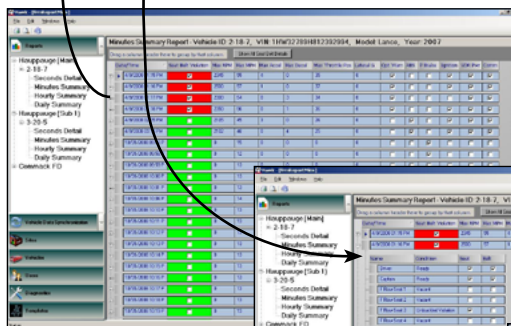
A variety of tools ...

... help manipulate and filter the data...

... to display very specific information.

Vehicle Data Synchronization Tab

The Vehicle Data Synchronization tab is used with the wireless interface or USB connected VDR. When this menu tab opens it reveals two buttons.

The Search Paired Vehicles button is used to begin the process of uploading data from a paired VDR. The Pair New Vehicle/VDR button is used the first time that communications is established between HAWK and a vehicle VDR, this is called pairing.

Each VDR must be paired with the HAWK software. This establishes a secure link between the two. During pairing the Vehicle Data Recorder Administration Password is passed form HAWK to the VDR.

Pair New Vehicles/VDR Button

This button is used to start the process for pairing HAWK and a new VDR. When pressed a window with instructions for pairing a VDR opens. Access to the vehicle is required. The vehicle name and the VIN needs to be entered during the pairing process to identify the vehicle.

For complete information on pairing a new VDR refer to Pairing HAWK Software and a VDR Section.

Search Paired Vehicles Button

This button is used to start a search for all paired VDRs within range of the wireless interface or connected by a USB cable. When pressed the directory window shows Searching...,

When the search for paired VDRs is complete, the directory window shows Vehicles Found. Open this directory to view a list of paired vehicles that are in range or connected and responded.

Vehicle Synchronization Window

Click on a vehicle folder to open the Vehicle Synchronization window. This window provides access to the VDR for that vehicle. To close the window the Close Session button is pressed. Refer to Vehicle Synchronization Window Section.

For complete information on uploading data from a VDR refer to Managing Data Section.
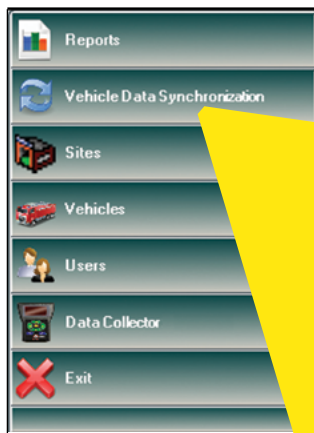
Search for a paired vehicle to synchronize with..
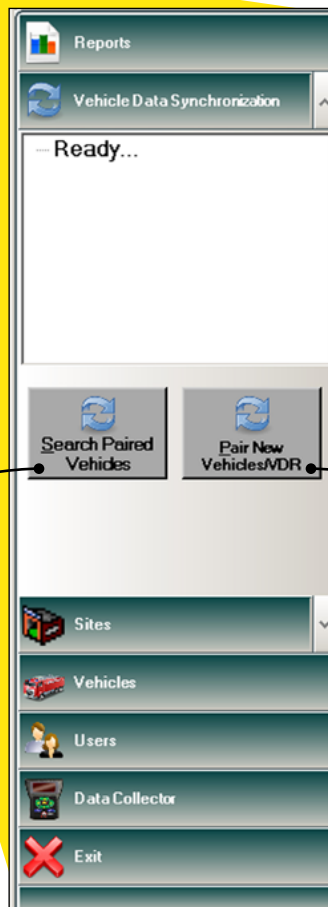
Set up for pairing with a new vehicle VDR.

Select the vehicle from the Vehicles Found directory to open the Vehicle Synchronization window.
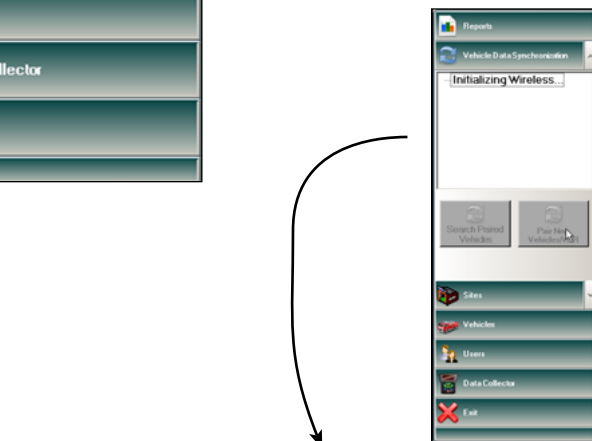
The Vehicle Data Recorder Pairing Instructions window is launched.
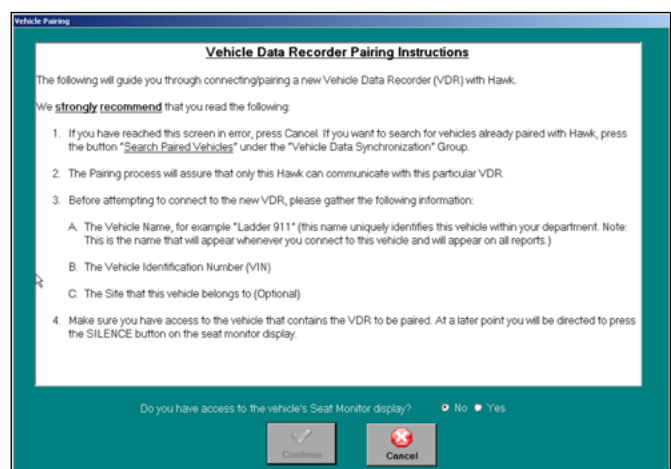
Sites Tab

The Sites tab opens the directory that contains the folders of vehicle sites. The Sites form is used to enter the site name, location, and other information that is used when generating reports. Information entered as the Site Name appears in the Site Assignment pull-down menu on the Vehicle form and is used to set up the site directories that appear under the Reports tab.

A user needs to have Edit selected in their profile in the Menu Access box on the Sites pull-down menu to edit or delete the site information.

Vehicles Not Assigned to a Site

If a vehicle is paired and is not assigned to a site it is listed under the Reports tab in the Vehicles with no site directory.

Adding a New Site

Click on the Add button to open a blank Sites form. Fill the form and click on the Save button. The site name entered on this form will be the directory name that shows up under the Reports tab.

Updating the Sites Form

The form can be updated by any user that has edit permission as set by the users profile. Click on the Edit button, update the information on the form, click the Save button.

Click on the Sites tab.

Open the directory. Edit the blank
Sites form to create a new site.

Sites
- Main Station
- Sub Station 1
- C FD
- Fire St

Sites entered in the system have
a folder. Click on a site name to
view or edit the information.

Sites

Site Name
Sub Station 1

Contact Name
Joe

Phone
(000) 000-0002

Fax
(000) 000-0003

Address
Fire House Plaza

5th Avenue

City
Any Town

State
New York   [Add State]

Zip Code
11767_____

Save Edit Cancel

Clicking on the Add or Edit
button opens a blank form and
changes the three buttons.

Add Edit Delete

Reports
- Main Station
- Sub Station 1
- C FD
- Fire Statioin II

Vehicle Data Synchronization

Sites

Vehicles

Users

Handheld Data Collector

Open the Reports tab.
Information entered as the Site Name
is used to set up the site directories that
appear under the Reports tab.

If a vehicle is not assigned to a site it will appear under
the Reports tab in the Vehicles with no site directory.

Vehicles Tab

The Vehicles tab opens the directory that contains the folders of vehicles. The Vehicle form is used to enter the profile of each vehicle that is in the database. The Vehicle Name information and VIN is entered during the pairing process.

The Vehicle Name is critical for synchronizing HAWK software to the vehicle VDR or the data collector, uploading the VDR data into the data base, and creating reports. It is also used to set up the vehicle folder that appears under the Reports tab in the site directory.

Use the Site Assignment pull-down menu to select the site where the vehicle is located. If the site is not listed it needs to be entered on the Sites form. When a vehicle is assign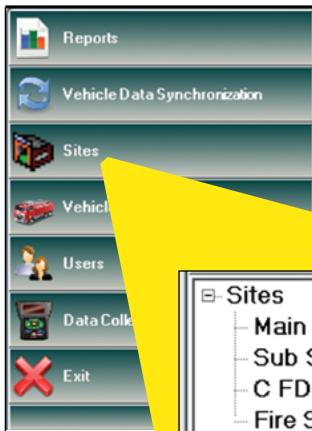ed to a site it appears under the Reports tab in the correct site directory. If a vehicle is paired and is not assigned to a site it is listed under the Reports tab in the Vehicles with no site directory.

A user needs to have Edit selected in their profile in the Menu Access box on the Vehicles pull-down menu to edit or delete a vehicle profile.

New Vehicle Information

Note: Information is not entered into this form for a new vehicle until the vehicle VDR is paired. Refer to Pairing HAWK Software and a VDR.

The information for the Vehicle Name box on this form is entered when the VDR is paired. This is the folder name that is in the site directory under the Reports tab.

The Vehicle Identification Number (VIN) is automatically uploaded from the VDR and checked or entered when the VDR is paired.
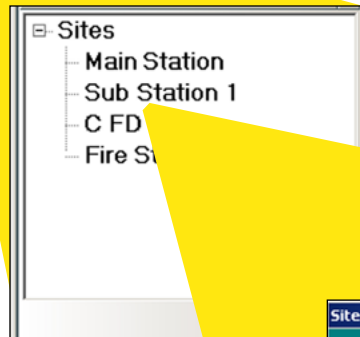
Updating the Vehicle Form

The form can be updated by any user that has edit permission as set by the users profile. Click on the Edit button, update the information on the form, click the Save button.
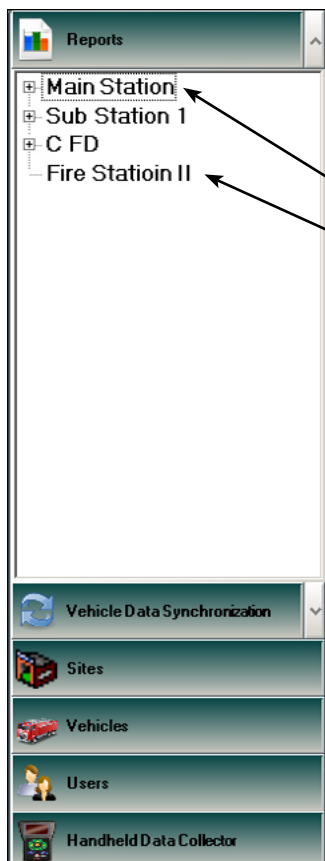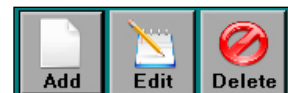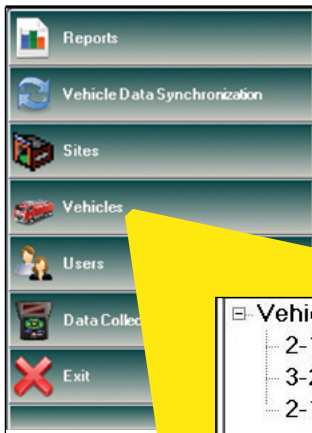
Click on the **Vehicles** tab

Open the directory. Once a vehicle VDR is paired there is a vehicle folder.
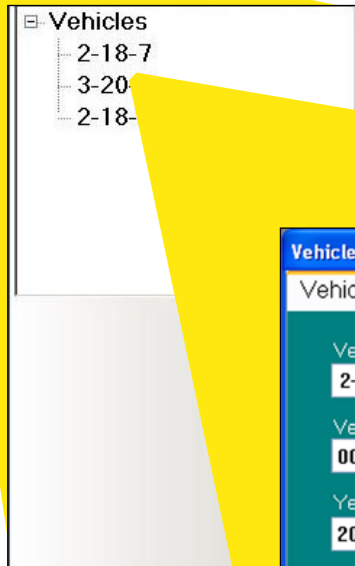
Click on a name to view or edit the **Vehicles** form to complete the vehicle profile.
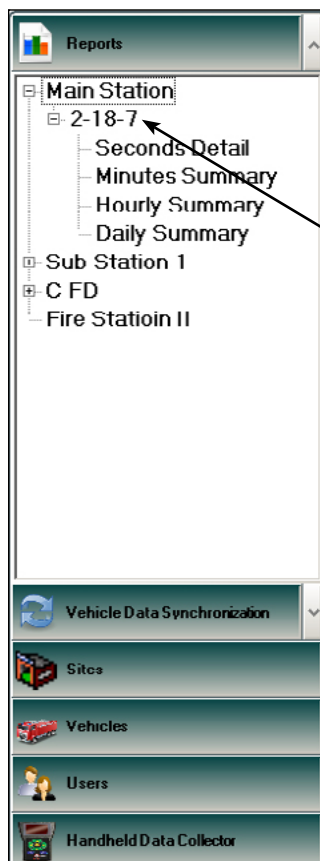
Information entered as the **Vehicle Name** is used to set up the vehicle folders that appear under the **Reports** tab in the site directories.

Users Tab

The Users tab opens the directory that contains the folders of valid users. A profile needs to be setup for each system user. This is accomplished by filling in the Users form. The profile establishes the users capabilities to access directories and to edit forms.

A user needs to have Edit selected in their profile in the Menu Access box on the Users pull-down menu to add, edit, or delete their own or another users profile.

Adding a New User

This is accomplished by clicking on the Users directory. Click on the Add button to open a blank Users form. Fill the form and click on the Save button. Pay attention to the selections made in the Menu Access box.

The users first name and last name entered on this form will be the folder name that shows up in the users directory.

Menu Access Box

The Menu Access box on the form has six program menus listed. These correspond to the six menu tabs. Each one has a pull down with two or three selections. These define the type of access that a user will have when a menu tab is clicked on with the mouse.

No View - the user can not open that menu.

View Only - the user can open that menu, see the directory, and has full access to view the contents.

Edit - the user has full access to view the contents and edit forms.

Data Collector User Permission Box

This box controls who has access to use the data collector. Check the Enable box and enter a password for the user. The password must be a combination of four (4) numbers. The next time the data collector is synchronized with HAWK software, the new user is added to the list of authorized users and shows up on the USER LOGIN panel.

Updating the Users Form

The form can be updated by any user that has edit permission as set by the users profile. Click on the Edit button, update the information on the form, click the Save button.
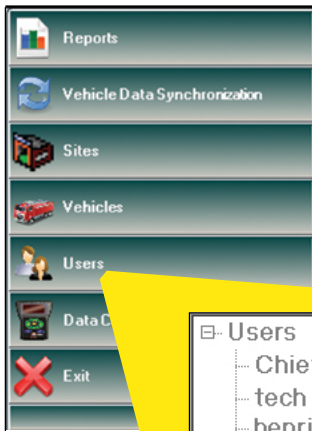
Click on the **Users** tab.

Open the directory. Edit the blank **Users** form to create a new user profile.
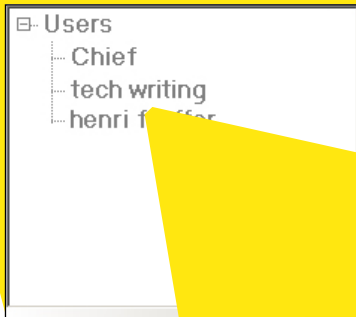
Users with profiles in the system have a folder. Click on a users name to view or edit the profile.

User access to menu tab directories is set by selections made from the pull-down menus in the **Menu Access** box.

Data Collector User Permission needs to be enabled with a 4-digit password for a user to have access to use the Data Collector.

Clicking on the **Add** button opens a blank form and changes the three buttons.

Any user with **Edit** selected in their profile on the **Menu Access Users** pull-down menu, is allowed to add, edit or delete a user profile.
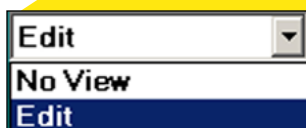
Each pull down defines the type of access that a user will have when a menu tab is clicked on with the mouse.

Data Collector Tab

The Data Collector tab opens the Data Collector Synchronization window. The data collector is a two-way communication device that is used to transfer information between HAWK and the VDR. The data collector communicates with the VDR via a wireless connection. The data collector communicates with HAWK through a cable plugged into one of the computer USB ports and the Data Collector Synchronization window.

Note: Refer to the Data Collector Manual (SBA2DC) for instructions on using the FRC portable data collector.

There are three menu tabs available when the Data Collector Synchronization window is open.

Synchronization Tab

This tab opens a window that is used to synchronize the data collector with HAWK software. Synchronizing the data collector to upload data is the most frequently used function under the Data Collector tab. It is used every time data needs to be moved between HAWK and the data collector.

When the data collector is connected to the computer USB port a list of the vehicles that data has been collected from is uploaded to HAWK. This list is shown in table format when this window is opened. When the Sync button is pressed the data is uploaded to HAWK and new information in HAWK is downloaded to the data collector.

Pre-pairing Tab

This tab opens a form that is used to enter vehicle information for the process of pairing a VDR with HAWK software. The pairing process is done once for each VDR.

Settings Tab

This tab opens a window that is used to initialize the data collector. A data collector only needs to be initialized one time when it is new.
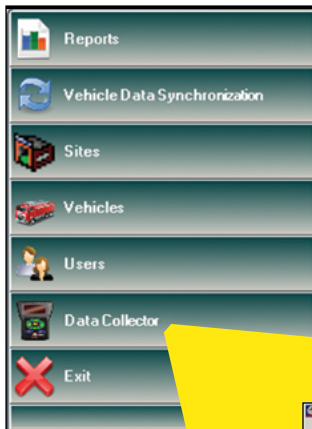
Refer to the Data Collector Manual (SBA2DC) for instructions on using the FRC portable data collector.
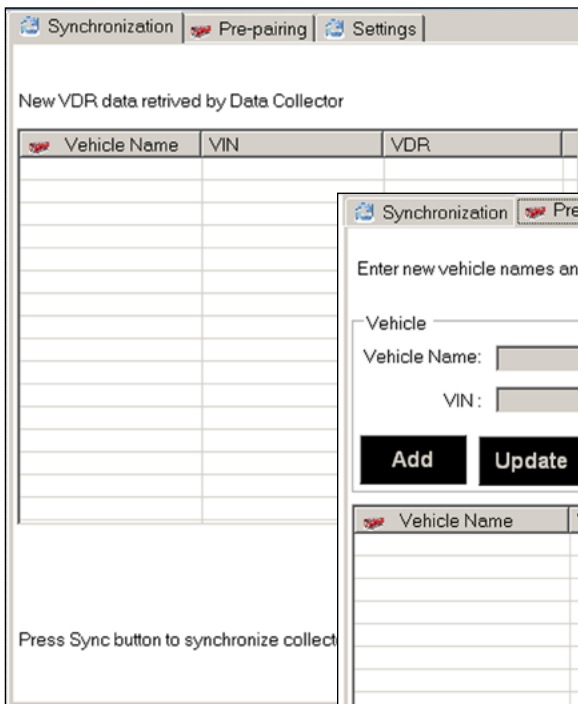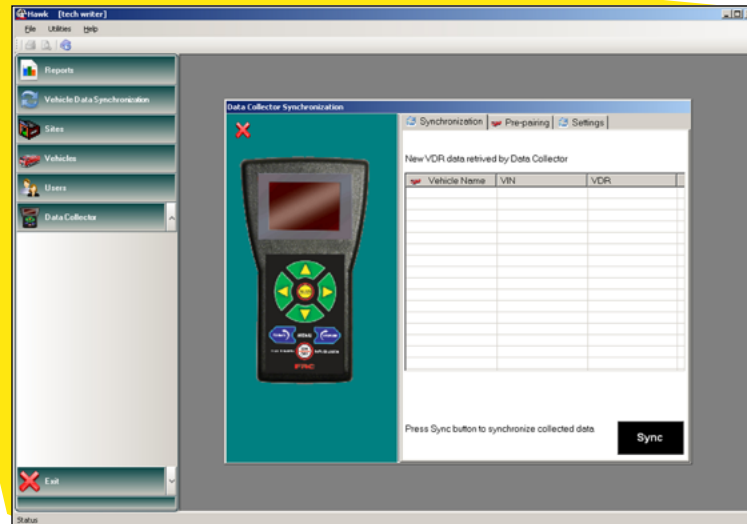
There are three menu tabs available when the Data Collector Synchronization window is open.
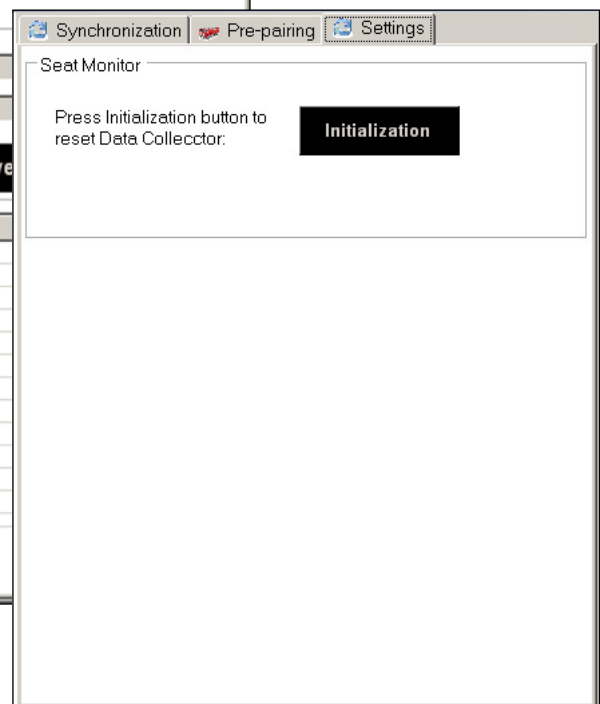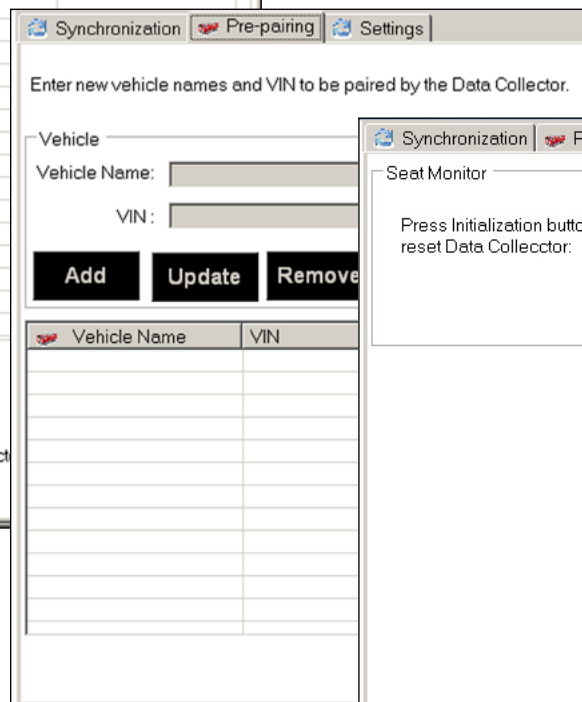
PAIRING HAWK SOFTWARE AND A VDR

Communications between HAWK software and Vehicle Data Recorders (VDR)are accomplished via wireless technology or a USB interface. A users initial communications with each VDR is used to establish a secure link between their copy of HAWK software and the VDR. This is called pairing the VDR.

The pairing process establishes a unique relationship between the copy of HAWK software that is loaded on the users computer and the VDR. This secures the recorded data stored in the VDR memory. The data is only uploadable by authorized personnel with the proper permissions and a valid password.

The recorded data stored in the VDR belongs to the owner of the vehicle. It is the owners responsibility to secure and limit access to the VDR. Once the pairing is accomplished other copies of HAWK software and data collectors are not able to retrieve recorded data from the VDR.

The OEM , dealers, and maintenance or service personnel are able to communicate with the VDR for service purposes after pairing as long as they have physical access to the truck. However, they are unable to retrieve or view any recorded data.

Note: When the pairing process is complete, the VDR is married to the vehicle. The Vehicle Identification Number (VIN) and the Unique Identity (UID) number of the VDR are recorded. Once paired a VDR cannot be used on a different vehicle.

Vehicle Access

To establish the initial communications between HAWK software (or the data collector) and the VDR, the user needs to have access to the vehicle. The seat monitor display SILENCE button needs to be pressed to confirm the vehicle selection. The pairing procedure only needs to be done the first time that HAWK software communicates with a VDR.

After Pairing

The HAWK software (as well as the data collector) and the VDR are able to communicate with each other once the VDR is paired without having to press a button on the vehicle display module.

The VDR Unique Identity (UID) is recorded and uploaded into HAWK. Each VDR is associated with a specific vehicle. If an attempt is made to improperly swap out the VDR, HAWK software recognizes this as a mismatch.

After the pairing process, only the authorized personnel set up with the correct permissions in HAWK (and the data collector) can retrieve stored data from the VDR.

Setup for Pairing

The following things need to be accomplished or available before pairing HAWK software and a VDR.

1. The HAWK software must be completely loaded on the computer.

2. The user logged in to do the pairing has a profile that is setup with the correct permissions. (If using the data collector, Data Collector User Permission must be enabled.)

3. Have the vehicle name on hand and ready to be entered.

4. Have the Vehicle Identification Number (VIN) on hand and ready to be entered.

5. Either a or b:

   a. The wireless interface module or VDR has a cable connected to the computer USB port.

   b. The data collector is connected to the computer USB port. Once the data collector is synchronized it is unplugged and carried to the vehicle location. To complete the pairing process, the data collector is again connected to the computer and synchronized with HAWK.

Note: Refer to the Data Collector Manual (SBA2DC) for instructions on using the FRC portable data collector.

6. It is required to have access to the seat monitor display module mounted in the vehicle.

7. The vehicle ignition is off.

System Power

The VDR is always powered and constantly checking for a request to connect. (This is indicated when the VDR is in sleep mode by the green STATUS POWER LED blinking). It may take up to 30 seconds, once the HAWK software (or data collector) starts searching for a new VDR, for a connection to be made. When the connection is made the VDR green STATUS POWER LED stays on and the seat monitor display comes on.

Pairing a VDR

The wireless interface module or USB cable from the VDR plugged into the computer USB port allows Hawk software to communicate with a VDR from a laptop or computer. The transmit/receive distance between the wireless interface module and the VDR is greater than 400 feet with no interference.

The name and VIN for the vehicle needs to be entered during the pairing process. Have this information ready.
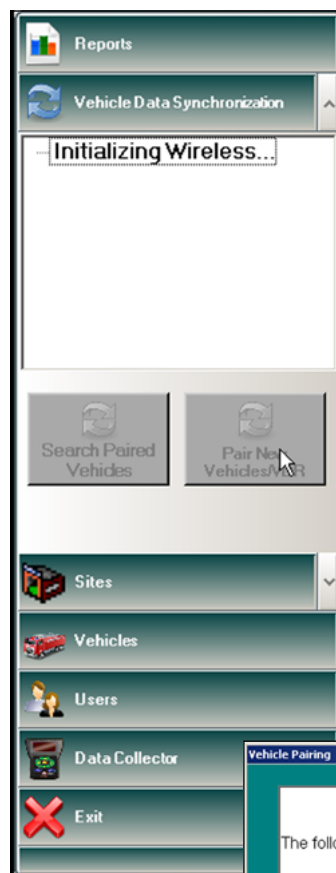
Open the Vehicle Data Synchronization tab in the HAWK program. Click on the Pair New Vehicle/VDR button.

Checking FRC Network

Hawk is looking for an open channel on the FRC Network. Please Wait...
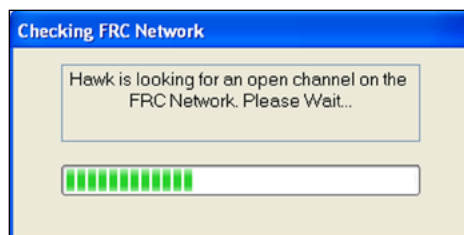
The Vehicle Data Recorder Pairing Instructions window is launched. Follow the procedures to establish communication with the VDR.

Vehicle Pairing

Vehicle Data Recorder Pairing Instructions

The following will guide you through connecting/pairing a new Vehicle Data Recorder (VDR) with Hawk.

We **strongly recommend** that you read the following:

1. If you have reached this screen in error, press Cancel. If you want to search for vehicles already paired with Hawk, press the button "Search Paired Vehicles" under the "Vehicle Data Synchronization" Group.

2. The Pairing process will assure that only this Hawk can communicate with this particular VDR.

3. Before attempting to connect to the new VDR, please gather the following information:

   A. The Vehicle Name, for example "Ladder 911" (this name uniquely identifies this vehicle within your department. Note: This is the name that will appear whenever you connect to this vehicle and will appear on all reports.)

   B. The Vehicle Identification Number (VIN)

   C. The Site that this vehicle belongs to (Optional)

4. Make sure you have access to the vehicle that contains the VDR to be paired. At a later point you will be directed to press the SILENCE button on the seat monitor display.

Do you have access to the vehicle's Seat Monitor display?   ○ No   ● Yes

Continue   Cancel

Once the button on the **Confirm Vehicle Selection** window is clicked, vehicle access has to be confirmed. This is done by pressing the **SILENCE** button on the seat monitor display in the vehicle cab.

Press and hold the **SILENCE** button until the seat belt icons flash amber. This indicates that the VDR is attempting to establish a connection. Release the button.

When a connection is made the seat belt icons flash green ...

... and the **Vehicle Synchronization** window opens.

HAWK and the new VDR are connected. Click on the **Pair VDR** button to configure the new VDR.

To exit without pairing HAWK and the new VDR, click on the **Close Session** button.
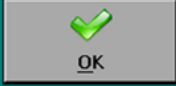
Configure New VDR

Enter the Vehicle Name:

Vehicle Idenification Number (VIN)

The VIN could not be read from the ECM. Please enter the Vehicle Identification Number (VIN).

Enter the Vehicle Identification Number (VIN):

Please enter the VIN again:
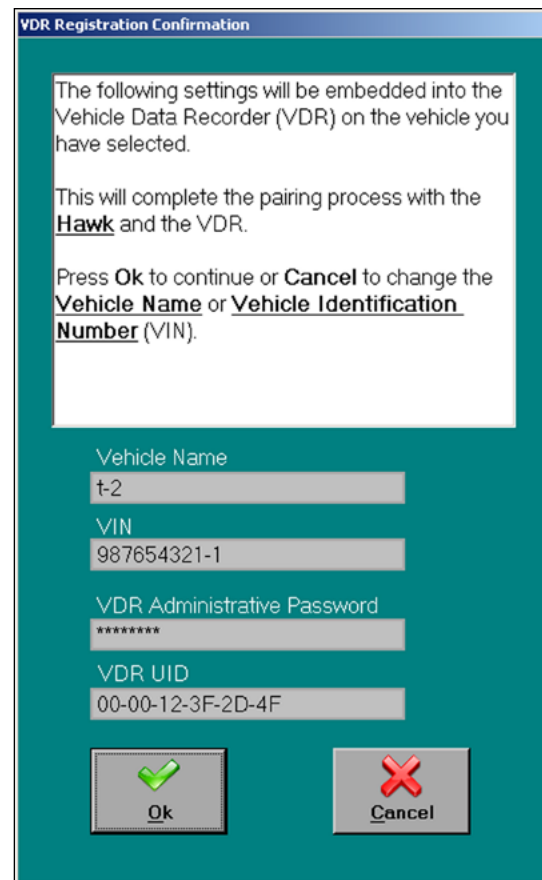
Select the Site this Vehicle belongs to (Optional):

No Site Assigned

OK   Cancel

When the **Configure New VDR** window opens, enter the vehicle name. Enter the VIN number in two places. Choose the site if it is available, if not it can be entered later on the vehicle form. Click on the **OK** button.

VDR Registration Confirmation

The following settings will be embedded into the Vehicle Data Recorder (VDR) on the vehicle you have selected.

This will complete the pairing process with the **Hawk** and the VDR.
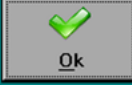
Press **Ok** to continue or **Cancel** to change the **Vehicle Name** or **Vehicle Identification Number** (VIN).

Vehicle Name
t-2

VIN
987654321-1

VDR Administrative Password
****

VDR UID
00-00-12-3F-2D-4F

Ok   Cancel

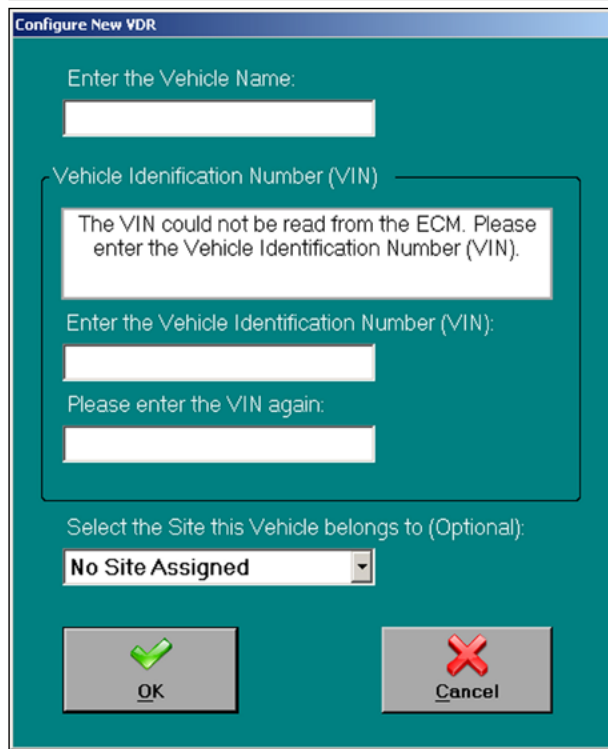When the **VDR Registration Confirmation** window opens, verify that the vehicle name and the VIN are correct. Once the **OK** button is clicked, HAWK and the VDR are paired.

> **Note:** The UID is a number that is unique to each VDR.

Vehicle Synchronization

Vehicle Name
NEW VDR 010

VIN
00000000000000000

UID
00-00-12-3F-1B-50

VDR
SB111, 6 Seats, No Radio

Display: Max Seats
13 Seats

Firmware Version
4.08

Upload Recorded Data

Retrieve Data

Bytes Transferred

Conversion Status

Pair VDR

Diagnostics

Equipment Manifest

I/O & Seat Mapping

VDR Clock

VDR Firmware

Close Session

Status   Logged In

The **Vehicle Synchronization** window opens, HAWK and the VDR are paired.

To exit this window and open another menu tab, click on the **Close Session** button.

VEHICLE SYNCHRONIZATION WINDOW

This window provides access to the VDR. It allows for vehicle information to be displayed, the retrieval of stored data, access to diagnostics and to system programming. Pressing any of the buttons opens a new window, to close the window the Close Session button is pressed. (For complete information on uploading stored data from a VDR refer to Managing Data Section.)

The WatchDog System tag is used when a WatchDog PRO module is installed. For more information refer to WatchDog Compartment Door and Equipment Monitor Manual (WDA100).
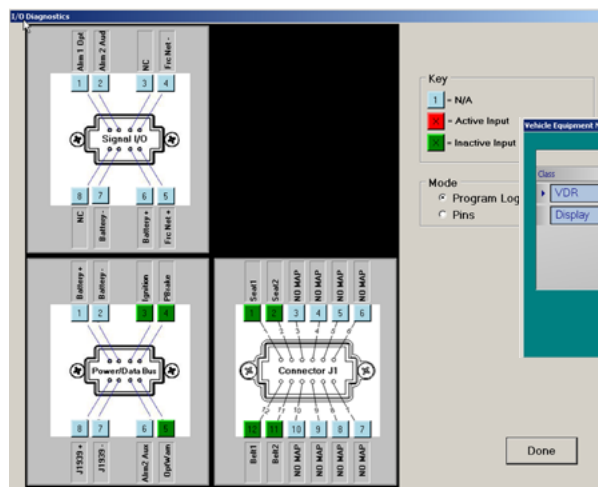
Diagnostic tools are used to assist in troubleshooting.

The Equipment Manifest provides information on installed system hardware and software.
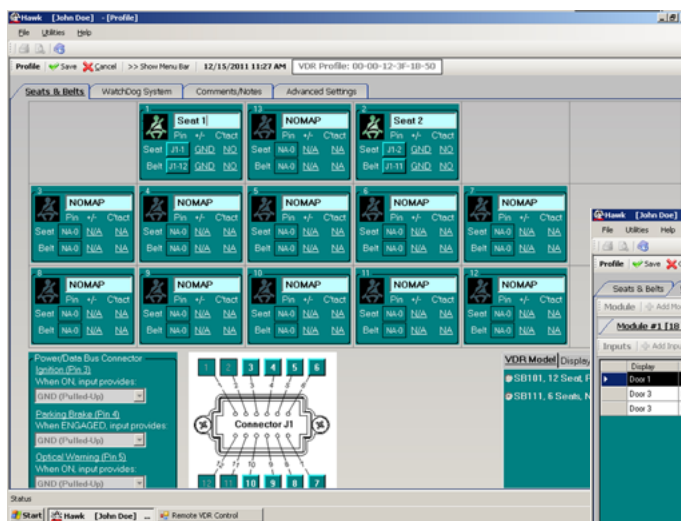
I/O and Seat Mapping
Set message display names for seat locations and WatchDog PRO inputs. Type in maintenance comments and notes.

MANAGING DATA

The main purpose of HAWK software is to store and manage the data collected by the VDR. By requirement, this data is password protected and can be manipulated to produce formatted reports.

Monitored Data

The VDR has inputs for and monitors information on the vehicle J1939 CAN bus, independent sensors, seat belt and seat occupied switches.

The VDR records the following data once per second
and stores it in a 48 hour loop.

Data	Unit of Measure
Vehicle speed	MPH
Acceleration (from speedometer)	MPH/Sec.
Deceleration (from speedometer)	MPH/Sec.
Engine speed	RPM
Engine throttle position	% of Full Throttle
Anti-Lock Braking System Event	On/Off
Seat Occupied Status	Occupied: Yes/No by Position
Seat Belt Status	Buckled: Yes/No by Position
Master Optical Warning Device Switch	On/Off
Time	24-Hour Clock
Date	Year/Month/Day

The VDR records the following data once per minute
and stores it for 100 engine hours.

Data	Unit of Measure
Maximum Vehicle Speed	MPH
Maximum Acceleration (from speedometer)	MPH/Sec.
Maximum Deceleration (from speedometer)	MPH/Sec.
Maximum Engine Speed	RPM
Maximum Engine Throttle Position	% of Full Throttle
Anti-Lock Braking System Event	On/Off
Seat Occupied with Seat Belt Unbuckled	Yes/No by Position at 30 sec. into min.
Master Optical Warning Device Switch	On/Off at 30 sec. into min.
Time	24-Hour Clock
Date	Year/Month/Day

Stored Data

Data that is stored in the VDR is collected and uploaded into the HAWK database using the USB port, wireless interface module, or the FRC data collector. The data is then available to be viewed or included in reports.

Notes:

The VDR has to be paired with the same copy of HAWK to collect or upload data.

The VDR is always powered and constantly checking for a request to connect. (This is indicated when the VDR is in sleep mode by the green STATUS POWER LED blinking). It may take up to 30 seconds, once the HAWK software (or data collector) starts searching for a new VDR, for a connection to be made. When the connection is made the VDR green STATUS POWER LED stays on and the seat monitor display comes on.

The vehicle ignition must be off to establish communications. If the ignition is turned on after the connection is made to the VDR, the communication link remains open as long as the vehicle is in range.

Wireless Interface or USB Interface

Uploading data from a VDR with the wireless interface module or USB interface is done with by accessing the VDR from the Vehicle Data Synchronization tab. The Vehicle Synchronization window is used to upload data into the HAWK database.

Refer to Collect VDR Data.

Data Collector

Collecting data from the VDR with the data collector is done using menus accessed on the data collector. The data collector must be synchronized with HAWK to uploaded the data onto the computer. This is done by connecting the data collector to the computer with a USB cable. Menus accessed from the Data Collector tab are used to synchronize with the data collector and then to move the data from the data collector memory into the HAWK database.

Refer to the Data Collector Manual (SBA2DC).

Collect VDR Data

The vehicle ignition must be off.

1. Open the Vehicle Data Synchronization tab and click on the Search Paired Vehicles button.

   Result: Initializing Wireless followed by Searching… shows in the directory window. When the search for paired vehicles is complete and connections are made Vehicles Found shows in the directory window.

2. Open the Vehicles Found directory to view a list of names of the paired vehicles that are in range, or connected via USB cable and responded.

3. Click on a vehicle name. (If no selection is made in 1 1/2 minutes, all wireless connections are shut down.)

   Result: The Vehicle Synchronization window for the selected vehicle opens. This window is used to upload stored data from the VDR. (All other connections are shut down.) The Retrieve Data button is enabled (double arrows are blue).

4. Click on the Retrieve Data button.

   Result: Data is uploaded from the VDR. Progress is shown in the Bytes Transferred box. When the data transfer is complete the Transfer Status window opens.

5. Click on the Transfer Status window OK button.

   Result: The data from the VDR is loaded into the HAWK database. When the data transfer is complete the Conversion Status window opens.

6. Click on the Conversion Status window OK button.

7. Click on the Close Session button.

   Result: The Vehicle Synchronization window for the selected vehicle is closed.

To view the data uploaded to the HAWK database open the Reports tab and search the directory for the vehicle folder. Use the Report Criteria form to generate a report.

The **Vehicles Found** shows in the directory window.
Highlight and click on the vehicle name to synchronize with.

Vehicle Synchronization

Vehicle Name
NEW VDR 010

VIN
00000000000000000

UID
00-00-12-3F-1B-50

VDR
SB111, 6 Seats, No Radio

Display: Max Seats
13 Seats

Firmware Version
4.08

Upload Recorded Data

Pair VDR

Diagnostics

Equipment Manifest

I/O & Seat Mapping

VDR Clock

R Firmware

se Session
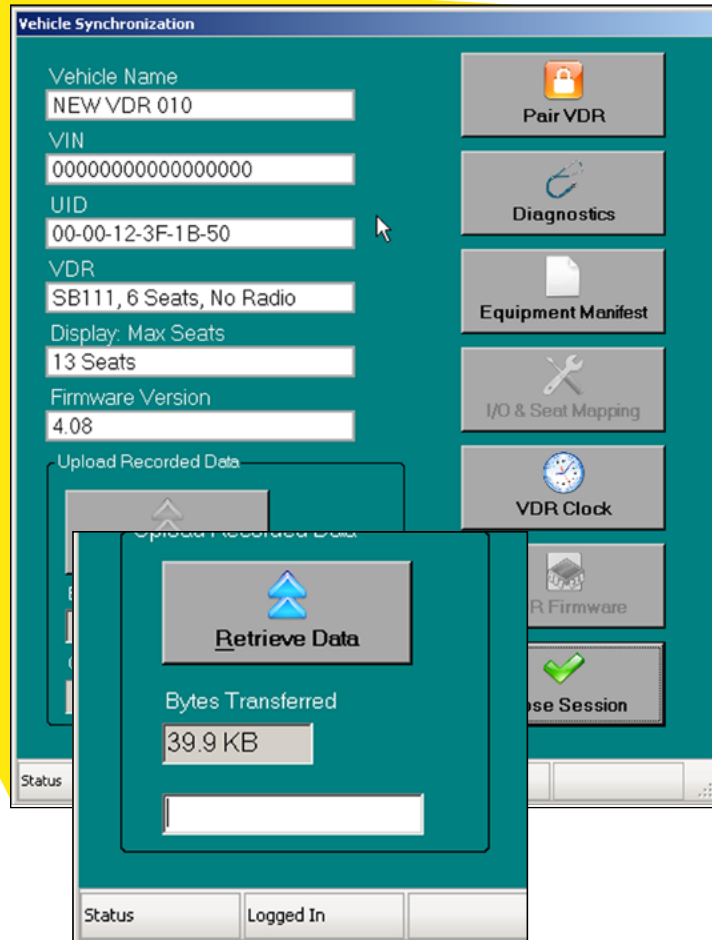
Click on the
Retrieve Data
button to upload the
data stored in the VDR.

Upload Recorded Data

Retrieve Data

Bytes Transferred

39.9 KB

Status

Status | Logged In

Transfer Status

Transfer complete, begin VDR data conversion into Hawk database.

OK
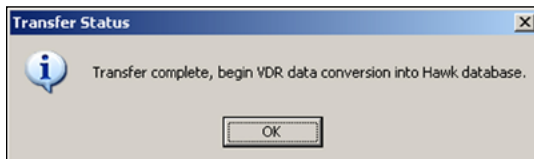
Data is transferred from the VDR.

Upload Recorded Data

Retrieve Data

Bytes Transferred

25.6 KB

Convert Status: [Copying to database]

99%

Status | Logged In

Conversion Status

VDR data conversion complete.

OK
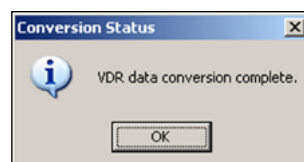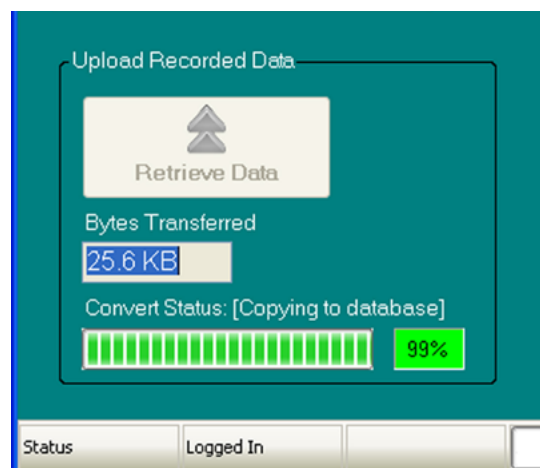
Data loaded in the HAWK database is viewed by opening the
Reports tab and searching the directory for the vehicle folder

Generating Reports

All data collected is stored with a date and time stamp. Once the data is uploaded into the database it is available for viewing, sorting, and printing.

Open the Reports tab, scroll through the directory and select a vehicle folder. In each vehicle folder there are four different types of reports available. The reports are broken down by seconds detail, minutes summary, hourly summary, and daily summary. Select one to launch the Report Criteria form.

Seconds Detail

The seconds detail report shows the data in 1 second increments.

The seconds detail is available for data that was uploaded from the VDR as second-by-second data. This may be limited in some cases to a 48-hour loop.

Minutes Summary

The minutes summary report shows the data in 1 minute increments.

The report generates the minute-by-minute summary of all data recorded. It shows the maximum value, a change in status, or a violation as recorded in the data set.

The VDR has sufficient memory to store in excess of 100 engine hours of minute-by-minute summary data.

Hourly Summary

The hourly summary report shows the data in 1 hour increments.

This report provides the status of each item included for that hour. It shows the maximum value, a change in status, or a violation as recorded in the data set.

Daily Summary

The daily summary report shows the data in 1 day increments.

This report provides the status of each item included for that day. It shows the maximum value, a change in status, or a violation as recorded in the data set.

Report Criteria Form

The Report Criteria form must be filled out to generate a report. Ensure that the dates and time in the From and To boxes are correct. Check the boxes of the items to include in the report, set filters, and criteria, then click on the OK button.

Some of the available features are:

Use the From and To boxes to select the date and time range.

View all data or select specific data to view.

Apply filters to view specific range of values or status of data.

Sort by clicking on the column heads and moving.

For each row of recorded data, the seat belt violation data can be expanded to view the detail status. This can be done by clicking on the + symbol on the left hand side of the date/time column.

Printing Reports

Open the FILE pull down menu on the window tool bar.

Click on Print to print the report.

Notes on printing:

- One of the most important features to remember about printing is that it is WYSIWYG (what you see is what you get).

- The range, columns and filters selected to generate the report on the screen are carried over to the printed report.

- The hierarchy to show seat belt details or not is carried over to the printed report.

- Printing supports color.

- Print Preview: There is a tool that is generated to support print previews. This tool allows the user to do the following:

  . Use the snap shots on the left hand side of the screen to easily navigate to a particular report page.

  . Zoom in/out.

  . Change the number of pages shown on the screen.

  . It has a snap shot tool to allow a user to copy sections of a report to the clipboard.

- Printing a range of pages is done through the Print menus. (You cannot set a range through the print preview.)

- Page setup is available on the FILE pull down menu to set up margins and page orientation.

VEHICLE DATA RECORDER (VDR)

All communications with the VDR are accomplished via wireless technology or a USB interface. Data is moved from the VDR and uploaded into the HAWK database. When needed, programming information and firmware updates are downloaded to the VDR in the same manner.

Connecting to a VDR

The VDR is always powered and constantly checking for a request to connect. (This is indicated when the VDR is in sleep mode by the green STATUS POWER LED blinking). It may take up to 30 seconds, once the HAWK software (or data collector) starts searching for a new VDR, for a connection to be made. When the connection is made the VDR green STATUS POWER LED stays on and the seat monitor display comes on.

OEMs, body builders, or dealers with the correct version of HAWK software are able to connect to the VDR as long as they have physical access to the vehicle. This is to program the VDR at installation or for service purposes after pairing. Once the VDR is paired to a end users copy of HAWK, access to the VDR is limited.

The pairing process establishes a unique relationship between the copy of HAWK software that is loaded on the owners computer and the VDR. This secures the recorded data stored in the VDR memory. The data is only uploadable by authorized personnel with the proper permissions and a valid password.

Refer to Pairing HAWK Software and a VDR section.

Update VDR Firmware

Import New VDR Firmware into HAWK

New versions of VDR firmware are supplied to customers in the form of a custom *.zip file. This file is imported into HAWK using the Utilities pull-down menu. HAWK keeps a catalog of all VDR firmware revisions.

The procedure to install a new VDR firmware version is as follows:

1. Open the Utilities pull-down menu.

2. Click on VDR Firmware and then Import New Firmware.

   Result: A Software update screen appears with a browse button so that a user can navigate to the location of the *.zip file.

3. Locate the file and click on the OK button.

   Result: A message box appears to confirm that the firmware update was extracted and imported into HAWK successfully.

Download Firmware from HAWK to VDR

Any authorized user of the Vehicle Data Synchronization tab has the ability to upgrade VDR firmware.

Note: The new firmware has to first be imported into HAWK, then it can be downloaded to a VDR.

1. Open the Vehicle Synchronization window for the selected vehicle. (Refer to Collect VDR Data Using a Wireless Interface, steps 1 through 3.)

2. Click on the VDR Firmware button.

   Result: A window opens with a list of the firmware stored in HAWK.

3. Highlight the new firmware version and press OK button.

   Result: A message box opens to confirm the upgrade.

4 Click Yes to download the new firmware to the VDR.

   Result: A status window displays the transfer of data. It may take a few seconds for the transfer to start. A message is displayed and VDR reboots itself when the transfer is complete.

The Vehicle Synchronization screen closes automatically after the transfer is complete.

Download Firmware from HAWK to VDR Using a Data Collector

New VDR firmware imported into HAWK is automatically downloaded to the data collector. This happens when the data collector is synchronized with HAWK. The new firmware is downloaded into the VDR by accessing the data collector VEHICLE menu, highlighting 1) Update Firmware, and pressing the SELECT button. Refer to the Data Collector Manual (SBA2DC)

SEAT MONITOR DISPLAY MODULE

There are four different Seat Monitor Display modules. The simplest models have seat belt icons and a silence button for the audible alarm. More complex models include a message display, push buttons for navigating through programs, vehicle system warning indicators, and the lateral acceleration indicator.

SBA100

SBA400

SBA200

SBA300

Message Display (SBA100, SBA200)

The data that the VDR is recording can be viewed live on the message display. The top line of the message display shows the name of each data field and the bottom line shows the current value. Press the left and right pushbuttons to scroll through the data fields. Refer to the Display Module Message Display table for descriptions.

When a data field is selected by scrolling that can be changed, the up and down pushbuttons are used. Refer to Setting the Time

Table: Display Module Message Display

Message Display	Description
THROTTLE	Engine throttle position in percent.
TACH	Engine RPM.
SPEED	Vehicle speed. Can be set to read MPH or KPH.
ACCEL DECEL	The acceleration is shown as a positive or negative and is set to MPH/s (miles per second per hour) or KPH/s (kilometers per second per hour) depending on the setting for speed.
SEAT BELT	Reflects the condition as shown by the seat belt icons.
IGNITION	Vehicle ignition state.
PBRAKE	Parking brake state.
ABS	Anti-locking brake system status.
LIGHTBAR	Master optical warning switch status.
Date and Time	The display needs to be set to show local time.

Set the Time (SBA100, SBA200)

The clock for the VDR is synchronized to the Coordinated Universal Time (UTC) at the factory. The seat monitor display module does need to be set to show the local time in the message display.

Note: The data recorded by the VDR and uploaded to the data management system is date and time stamped using UTC. The HAWK software converts it to local time for use in the data management system. The time set on the display does not effect the time stamp on uploaded data.

1. Press the left and right pushbuttons and scroll to show the Date and Time.

2. Press the down (SILENCE) button.

3. Press the left and right pushbutton to select 12 or 24 hours time format.

4. Press the down (SILENCE) button.

   Result: UTC and + or – offset amount will show in the lower window.

5. Press the left and right pushbutton to adjust the offset. The time shown in the upper window changes as the offset is adjusted. Set the upper window to show the correct local time.

6. Press the up button twice to return to normal display.

Set the Lateral G Indicator (SBA100)

The five LED indicators display the side-to-side force on the vehicle. Input for these LEDs are from an accelerometer mounted in the Lateral G Sensor Module. The amount of lateral force that each LED indicates is set using the pushbuttons on the display.

Factory default setting for the LEDs are: green less than 0.2 g; amber 0.2 to 0.25 g; red greater than 0.25 g. (1 g = 9.806 m/s^2)

Change the Amber LED Setting

1. Press and hold the down (SILENCE) button and left scroll button at the same time for three (3) seconds.

   Results: The display shows LAT G and the setting for the amber LED to come on.

2. Press the left or right scroll buttons to change the setting.

3. Press the up button to save the setting and return to normal display.

Change the Red LED Setting

1. Press and hold the down (SILENCE) button and right scroll button at the same time for three (3) seconds.

   Results: The display shows LAT G and the setting for the red LED to come on.

2. Press the left or right scroll buttons to change the setting.

3. Press the up button to save the setting and return to normal display.

Self-Test Mode

There is a self-test mode built into the display modules. When initiated it allows all the LEDs and pushbuttons to be tested. The function to change the terminating resistor status is included in the self-test mode. When multiple display modules are used, the terminating resistor at the module with the tee fitting (first in line) needs to be unterminated.

SBA100, SBA200

Note: The seat belt icons may form a green or red C pattern indicating that the VDR is looking to establish a wireless connection. This is not the self-test.

Press and hold the down (SILENCE) button until DIAG MENU is shown in the message display (approx. 45 seconds). Release the SILENCE button and TEST DISPLAY is shown. The display module is now in the test mode. Press the right button to scroll through the tests as shown in Table HM-3 Display Module Self-Test Mode.

Table: SBA100, SBA200 Self-Test Mode

Message Display	Action
TEST DISPLAY	Press the down (SILENCE) button, the message display runs a test sequence.
TEST LEDS	Press the down (SILENCE) button, the seat belt icons run a test sequence.
TEST BUTTONS	Press each button, the message display responds. Press and hold the down (SILENCE) button to exit.
DEVICE DATA	The message display shows the following information: serial number, software version, hardware version, manufacture date, and unit IDs.
CAN BUS MENU	Set CAN bus terminating resistor ON or OFF
DEMO PROG	TBD
TEST EXIT	Press the SILENCE button to exit the self-test mode.

SBA300, SBA400

Note: The seat belt icons may flash green or red indicating that the VDR is looking to establish a wireless connection. This is not the self-test.

Press and hold the SILENCE button until the seat belt icons start the test sequence by blinking on one at a time (approx. 45 seconds).

Release the SILENCE button. The display module is now in the self-test mode and runs the test sequence. At the end of the sequence the seat belt icons are green or red. The green (T) indicates that the datalink terminating resistor is on, the red (U) indicates that the datalink terminating resistor is off. To change the terminating resistor status, press the SILENCE button. The self-test mode is canceled when complete.

Operational Check

The following tests should be performed after installation and can be used as a troubleshooting aide.

The display module has self-test that can be run to check the LED and button operation and show information such as software version, hardware version, and manufacture date. It also includes the function to change the terminating resistor status. Refer to Self-Test Mode.

When the system is in the sleep mode, press any button to activate it.

Parking Brake Indicator

The P icon is green to indicate the parking brake is set. (SBA300 does not have vehicle system warning indicators.)

Hazardous Condition Indicator

The door open icon is red to indicate a hazardous condition exists. This indicator is active with a compartment door and equipment monitor (WatchDog PRO) module installed. The system can be programmed to use the message display to show the name and location for each input that is causing an alarm.

Check the Seat/Belt Switch Input

This is a simple test to make sure that the VDR is receiving the switch signals from the seat and the belts. It verifies that they are wired correctly and checks the VDR profile. This test also checks the data link between the VDR and the display module.

Perform the following for each seat. Ensure that each seat triggers the desired seat belt icon position on the display module. Have the parking brake set and the ignition off.

1. Activate the seat switch by sitting in the seat.

   Result: The seat belt icon for that seat lights amber.

2. Fasten the seat belt.

   Result: The seat belt icon turns green.

3. Repeat at each seat.

TROUBLESHOOTING TIPS

This section offers information to help you avoid some of the most commonly-reported difficulties associated with using HAWK efficiently. Looking through the following can solve many problems and often eliminate the need for telephone assistance.

KEY:
Find the Operation with a Problem
Look for possible causes or solutions.

Loading HAWK Software

Ensure that the computer meets or exceeds the requirements for running the HAWK programs. Refer to Introduction section.

Ensure that you are logged onto the computer as the administrator.

If HAWK does not launch automatically when the CD is inserted, navigate to the CD drive and double click on the setup.exe file.

Logging In to HAWK

The Login User Name and Password are case sensitive.

Ensure the User Name and Password are correct.

Accessing Menu Tabs

Check the user profile.

Pairing a VDR Connected with a USB Cable

Ensure the user has access to the Vehicle Data Synchronization tab.

Ensure that the VDR is not already paired.

Ensure the VDR is connected to the computer with the USB cable.

Ensure that the vehicle ignition is off.

Ensure the VDR has power and is in the sleep mode (the green STATUS POWER LED blinking).

Ensure the seat monitor display in the vehicle shows a C pattern.

Collecting Data from the VDR Connected with a USB Cable

Ensure the user has access to the Vehicle Data Synchronization tab.

Ensure the VDR is connected to the computer with the USB cable.

Ensure the VDR is paired to the same copy of HAWK software.

Ensure that the vehicle ignition is off.

Ensure the VDR has power and is in the sleep mode (the green STATUS POWER LED blinking).

Pairing a VDR Using the Wireless Interface Module

Ensure the user has access to the Vehicle Data Synchronization tab.

Ensure that the VDR is not already paired.

Ensure the wireless module is connected to the computer with the USB cable.

Ensure that the vehicle ignition is off.

Ensure the VDR has power and is in the sleep mode (the green STATUS POWER LED blinking).

Ensure the seat monitor display in the vehicle shows a C pattern.

Collecting Data from the VDR with the Wireless Interface Module

Ensure the user has access to the Vehicle Data Synchronization tab.

Ensure the wireless module is connected to the computer with the USB cable.

Ensure the VDR is paired to the same copy of HAWK software.

Ensure that the vehicle is in wireless range.

Ensure that the vehicle ignition is off.

Ensure the VDR has power and is in the sleep mode (the green STATUS POWER LED blinking).

Pairing a VDR Using the Data Collector

Ensure the user has access to the Data Collector tab.

Ensure the user has access to the data collector login list and has the correct password.

Ensure the data collector is initialized to the same copy of HAWK software as the VDR.

Ensure that data was entered in the Pre-pairing form and synchronized.

Ensure that the vehicle ignition is off.

Ensure the VDR has power and is in the sleep mode (the green STATUS POWER LED blinking).

Does the data collector power up when the ON - OFF button is pressed:

Ensure battery is good (voltage greater than 6 VDC).

Ensure that battery is installed correctly.

Ensure the seat monitor display in the vehicle shows a C pattern.

NOTES

NOTES

⚠ DANGER

PERSONAL RESPONSIBILITY CODE

The member companies of FEMSA that provide emergency response equipment and services want responders to know and understand the following:

1. Firefighting and Emergency Response are inherently dangerous activities requiring proper training in their hazards and the use of extreme caution at all times.
2. It is your responsibility to read and understand any user's instructions, including purpose and limitations, provided with any piece of equipment you may be called upon to use.
3. It is your responsibility to know that you have been properly trained in Firefighting and/or Emergency Response and in the use, precautions, and care of any equipment you may be called upon to use.
4. It is your responsibility to be in proper physical condition and to maintain the personal skill level required to operate any equipment you may be called upon to use.
5. It is your responsibility to know that your equipment is in operable condition and has been maintained in accordance with the manufacturer's instructions.
6. Failure to follow these guidelines may result in death, burns or other severe injury.

FEMSA

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