**ChronoLog**

Time-Barring and Data-Logging

# Revision History

## *Revision 1.1:*                                              *2*

- Added the footnote on page 6, that details the extra connector on the SupaSmart/Nova board.

- Changed the highlighted text in the following sentence found on page 8 0: Press the *(Download) PC* button on the ChronoLog unit (This will put the ChronoLog device in a download mode for approx. 30 seconds).

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# *The ChronoLog System*

## *Introduction*

The ChronoLog unit is an add-on device for the SupaSmart receiver. It allows time-barring and transaction logging to be added to the SupaSmart system. Hence the SupaSmart system can be easily upgraded from a group management system to an access control system with the addition of the ChronoLog unit. The existing transmitter-receiver infrastructure is compatible with the system[1]. This offers a cost effective solution to upgrading to an access-control system.

The ChronoLog is connected to the SupaSmart using a 4-wire connector that plugs onto the 4-way port on the SupaSmart board. Every time a valid transaction is received by the SupaSmart, information pertaining to the transaction is sent to the ChronoLog (If it is present on the 4-way port). This information is validated against the time-barring information onboard, and the transaction is stored with a time and date stamp. A reply is sent to the SupaSmart indicating whether access should be granted, based on the validation against the time-barring information.

The Time Barring function is configured with the PC software supplied with the ChronoLog unit. This software allows the user to configure time zones that can be added to the group definitions that exist on the SupaSmart. This information can then be downloaded from the PC to the ChronoLog unit. This allows for the ChronoLog to have stand-alone capability. i.e. It is not necessary to have the PC connected to the ChronoLog device permanently to implement time barring on the ChronoLog.

1024 transactions can be stored by the ChronoLog on its onboard memory. This memory is non-volatile, meaning the transactions will not be lost if the power fails on the device. The memory is maintained in a rolling buffer structure. This allows the ChronoLog to record the most recent 1024 transactions. The Data Logging function requires no setup other than setting the time on the ChronoLog onboard clock. This is done from the PC using the time-barring software supplied. The system time is downloaded to the ChronoLog device when the time barring information is downloaded. However, if the ChronoLog unit is only going to be used as a data-logger, it is not necessary to configure the time barring information on the PC before downloading the time.

The transactions that are logged, can be printed to a printer in real time. i.e. Every time a transaction occurs, the ChronoLog will stream the transaction to a printer. In addition, all the transactions that are stored on the onboard memory can be printed to the printer. Finally the transactions can be uploaded from the ChronoLog memory to a PC.

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[1] This only applies to systems where the SupaSmart has firmware of version 2 or better. If the firmware version precedes this, the SupaSmart receiver must be upgraded to be compatible with the ChronoLog unit. The SupaSmart version is displayed on the SupaSmart console on power-up.

# *Basic Operation*

The ChronoLog has 4 connectors:

- A DB9 connector for a PC link.
- A DB25 connector for a simple Centronix printer connection.
- A 4-way connector for connection to the SupaSmart.
- A power socket.
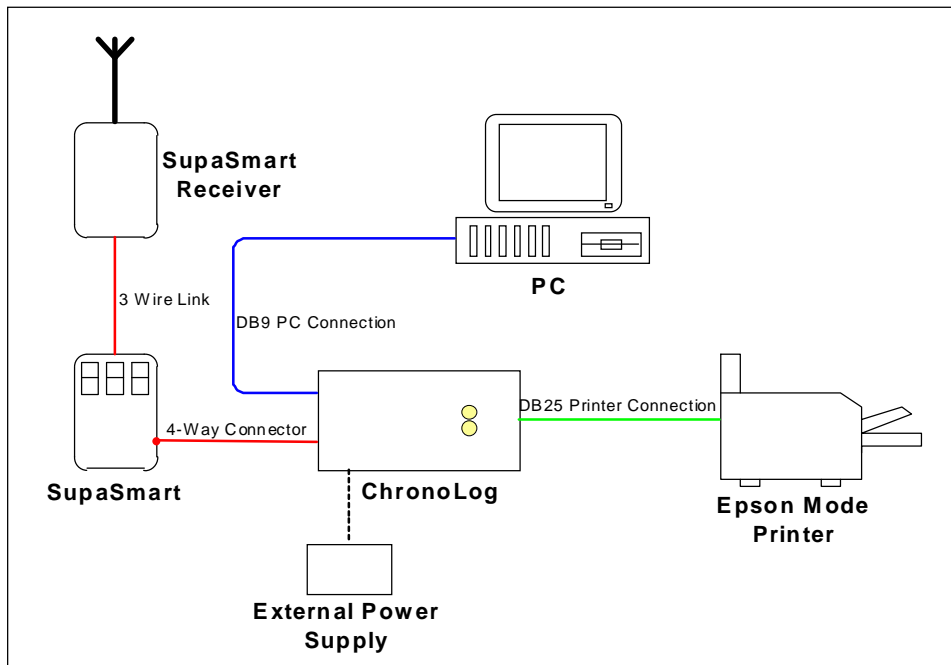


**Figure 1 - ChronoLog System Connections**

When the ChronoLog is connected to the SupaSmart[1][2], the system will start logging transmitter transactions. Each transaction will have a time and date associated with it, as well as the group information that the SupaSmart provides. For the ChronoLog to time and date stamp each of the transmitter transactions, a real time clock forms part of the hardware base of the system. To set the correct date and time on the real time clock, the ChronoLog needs to be connected to the PC, via the DB9 connector. Time barring information can then be downloaded to the ChronoLog, along with the system date and time on the PC.

The printer required for data logging must support Epson mode emulation, and must be a simple dot-matrix printer for correct operation[3]. If no printer is connected to the ChronoLog, the

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[1] When disconnecting the ChronoLog from the SupaSmart, do not leave the connecting cable hanging on the SupaSmart port. The impedance of the connecting cable is enough to affect the SupaSmart's normal operation.
[2] With the townhouse receiver board (SupaNova/Smart board) revision, an extra 4-way connector is located in the top left hand corner of the SupaNova/Smart console. This connector is intended for future expansion of the townhouse receiver. It supports the connection of the townhouse receiver to a PC, on a RS232 interface. This connector is strictly reserved for this purpose. The ChronoLog must not be connected to this interface. Instead the ChronoLog must only be connected to the 4-way connector located in the top right hand corner of the SupaNova/Smart board. This connector is labelled "Memory".
[3] Refer to the section on printer compatibility for a list of printers that have been tested on the ChronoLog.

ChronoLog will still log transactions and store them in onboard non-volatile memory. To retrieve the stored transactions at some later date, a printer can be connected, and the ChronoLog can be put in a "**Printer Dump**" mode. This will dump the entire contents of the memory to the printer.

If the ChronoLog is connected to the PC on the DB9 adapter, and the data logging software is installed on the PC, then the transactions can be uploaded from the ChronoLog when it is in "**Printer Dump**" mode. This is more flexible than printing the transactions to a printer as it allows the transactions to the filtered and sorted to find a data set of interest.

## *Power Considerations*

The ChronoLog is able to derive power from three sources. The first is the SupaSmart, which provides a 5V line to drive the microelectronics on the ChronoLog. The second is the PC, which enables the user to disconnect the ChronoLog from the SupaSmart, and connect it to the PC for the time barring download without having to worry about powering the unit externally[1]. The last source is an external 12V DC power supply. The ChronoLog will tolerate voltages from 9V to 15V DC, and typically draws 12mA. Hence the power supply should be rated to supply at least that at 12V. In addition the power socket is polarity insensitive, meaning that the positive and negative terminals can be connected either way.

The ChronoLog cannot derive power from the printer. This means that the ChronoLog must be connected to the SupaSmart or to an external power supply for the printer operations on the ChronoLog to work correctly. It is not recommended to use the PC connection alone if the ChronoLog is dumping transactions to the printer.

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[1] On some PC's, the internal drivers are not capable of supplying the necessary current to the ChronoLog. This can lead to the irregular operation of the ChronoLog. In these cases, an external power supply should be used with the ChronoLog.

## *Quick Users Guide*

This Quick User's guide is intended for PC users who are familiar with the Windows environment, and want the very basic functionality of the ChronoLog device. It was written with brevity in mind, and hence many of the concepts are not fully explained. If anything is not clear it is suggested that you refer to the more comprehensive documentation. Furthermore, the special features on the software are not discussed in this guide. Refer to the relevant section in the comprehensive documentation for a full discussion of the features.

### *Implementing Time Barring on the ChronoLog*

- Open the CD, and copy the ChronoLog Time Barring executable (ChronoLog.exe) to the hard-drive. The file should be copied to a new directory.

- Set the required **Time Zones** in the **Edit Time Zones** dialog.

- Set the group information for each group that needs to be defined. This information includes linking the defined **Time Zones** to the groups, and adding **Group Names**.

- Download the Time Barring information to the ChronoLog unit. To do this: Connect the ChronoLog to the PC with the cable supplied.  The cable must be attached to COM 1 on the PC. Open the **Download** dialog. Press the PC button on the ChronoLog unit (This will put the ChronoLog device in a download mode for approx. 30 seconds). While the ChronoLog device is in download mode click the **Download** button on the PC.

### *Implementing Data Logging on the ChronoLog*

- Open the CD, and copy the ChronoLog Time Barring executable (ChronoLog.exe) to the hard-drive. The file should be copied to a new directory.

- Open the ChronoLog Time Barring application. Without setting up any of the time barring information, open the Download dialog. Download the default time barring information, and importantly the PC system date and time to the ChronoLog unit.

- The ChronoLog can now be connected to the SupaSmart unit.

- If a printer is connected to the ChronoLog unit while it is connected to the SupaSmart, the ChronoLog will log transactions to the printer as they occur.

- The ChronoLog will dump its entire memory contents to the printer if the **Printer Dump** button is pressed on the ChronoLog device.

## *Uploading the Transaction records from the ChronoLog to the PC*

- Run the install utility for the ChronoLog Data Logging application. This will install the ChronoLog Data Log application on the PC.

- Open the DataLog application, and configure the options in the **Options** dialog.

- Create a new ChronoLog database file.

- Connect the ChronoLog unit to the PC using the cable provided. Press the **Printer Dump** button on the ChronoLog unit to upload the memory contents to the PC.

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**Note**: If the PC doesn't have the correct data access drivers (**Windows 95** or **Windows NT**, without **Microsoft Office**[1]) the ChronoLog will be unable to create a new database file. If this is the case the ChronoLog DataLog Lite application can be used to upload the transaction information from the PC. (Refer to the section on the ChronoLog DataLog Lite for installation and operation instructions.)

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[1] Windows 95, Windows NT, and Microsoft Office are all registered trademarks of the Microsoft Corporation.

# The ChronoLog Time-Barring Application

## *Introduction*

The ChronoLog Time Barring application is used for a number of purposes, the most important of which, is as the name implies, to implement time barring access control on the ChronoLog. The ChronoLog will operate without the time barring implemented, however the use is limited to a simple data logging function. To implement the time barring functionality on the ChronoLog, the time barring information must be configured on the PC, and then downloaded to the ChronoLog board.

In addition to time barring, the Time Barring application is used to set the time on the onboard clock on the ChronoLog. Finally, the application is used in conjunction with the ChronoLog DataLog application to make the transaction data easier to analyse (Refer to the section on linking group information in the ChronoLog DataLog User's Guide). By setting up the name information for each group on the time barring application the user is able to link the **Group Number** information back to a **Group Name**.

## *Installation*

To install the application, create a new folder on your hard drive and copy the
**ChronoLog.exe** file to the directory. If you wish you can create a shortcut to your
desktop (See the Microsoft Windows manual for creating shortcuts), or run it directly
from the folder.

Once the file has been copied to the hard-drive, you can run the application by
double-clicking on it. The application should load up the main dialog as shown in
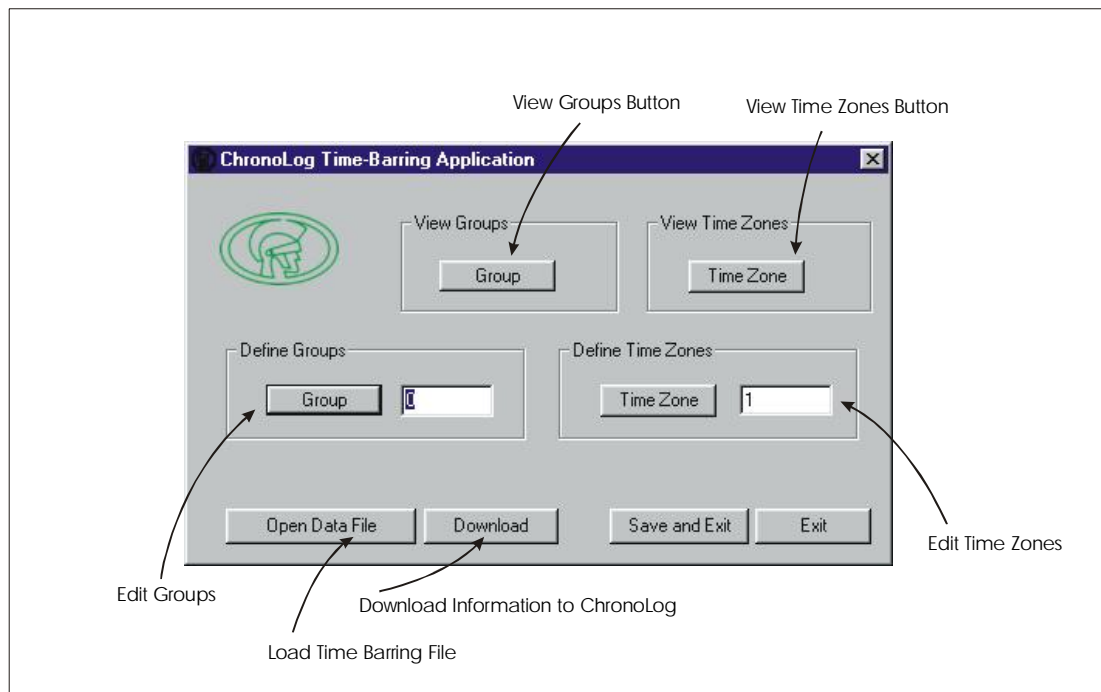Figure 2.



**Figure 2 - ChronoLog Time-Barring Application**

## *Implementing Time Barring on the ChronoLog*

The ChronoLog Time Barring system consists of two main entities. **Time Zones**, and **Groups**.

There are 31 time zones. 29 of them are configurable (Time Zones 1-30). Time Zone 0 is for all access, and Time Zone 31 is for no access. Each time zone allows you to specify a start time and an end time. These time definitions consist of a day of the week and a time. This means for example that you can set a time zone up to grant access from Mon 8:00 to Mon 17:00.

There are 1000 Groups (Group Number 0-999). These groups are in accord with the groups on the SupaSmart. Each group can have a name associated with it, as well as 8 time zones. User configured time zones must be setup before they can be added to a group. The only time zones that can be added to a group without defining any user time zones are the full-access and no-access time zones. By default every group is assigned the group name 'Default', and the full access time zone.
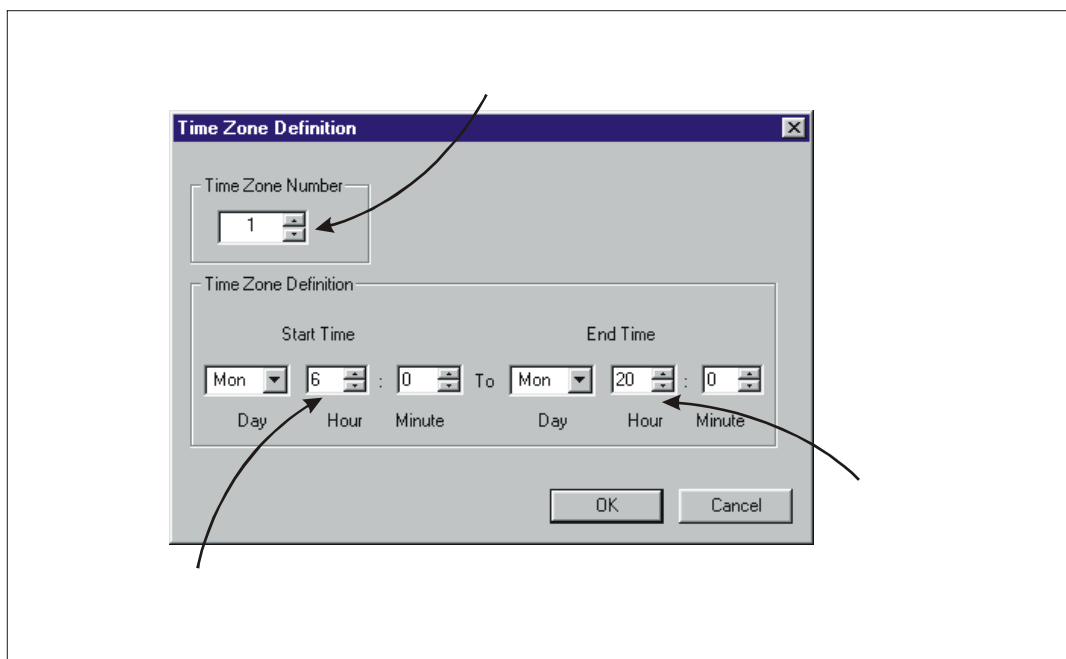
## *Setting up time Zones*



**Figure 3 - Time Zone Definition Dialog**

To set up a time zone you need to select the **Time Zone** button in the **Define Time Zones** frame. You can specify the time zone you are trying to set, before clicking the **Time Zone** button, by specifying a time zone number in the text box. Alternatively you can select the time zone in the **Define Time Zone** dialog (Refer to Figure 3).

Once you have selected a time zone you want to add or edit in one of the two methods mentioned above, you need to set the zone information. Select a **Start Day** and **Time** by entering the information in the relevant text boxes. This time defines the point

where access will begin being granted. Next select an **End Day** and **Time**. This time defines where access will stop being granted. (The user must be careful to define the zones correctly. For example setting up a time zone from Monday 7:00 am to Tuesday 5:00 pm means access will be granted from 7:00 o'clock Monday right through to 5:00 o'clock Tuesday. It does not mean that access will be granted from 7 to 5 on Monday and Tuesday.)

You can define more than one time zone by selecting a different time zone number in the text box in the **Time Zone Number** frame, and editing the time information as indicated above. Once you have finished entering or editing time zones press the **Ok** button.

To view the available time zones, click the **Time Zone** button in the **View Time Zone** frame. This will open a **Time Zone Viewer** dialog (Shown below in Figure 4) with all the zone information displayed in a list. If you want to edit a time zone in this list, double click on the zone (or select a time zone and click the **Edit Zone** button) and the **Time Zone Definition** dialog (Figure 3) will appear.
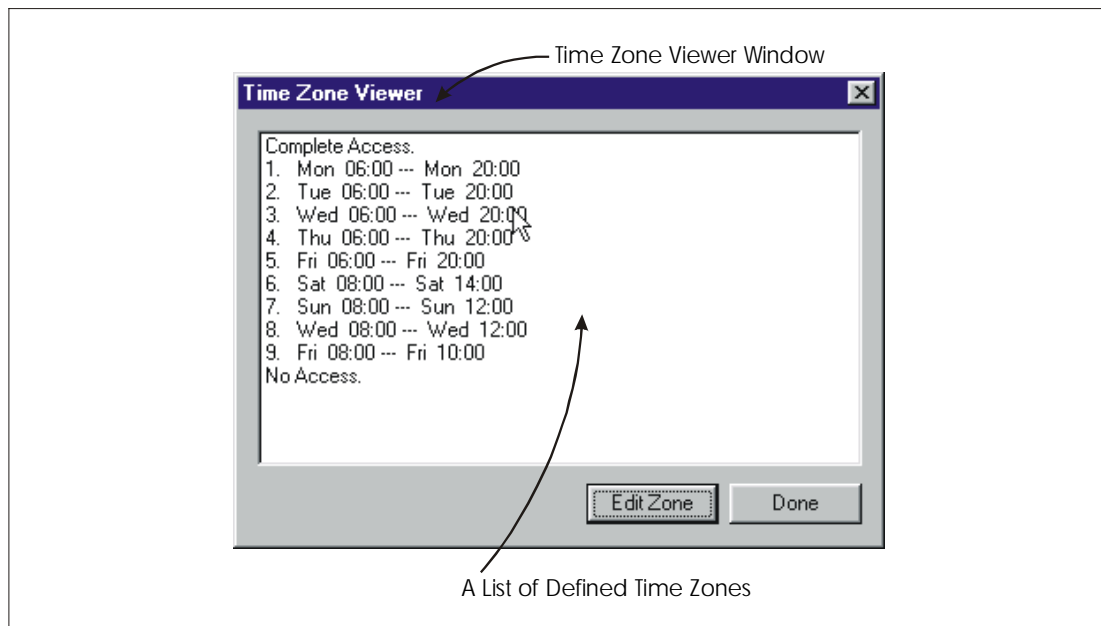


**Figure 4 - Time Zone Viewer Dialog**

## *Setting up the Group Information*

To configure a group you need to click the **Group** button in the **Define Groups** frame. You can specify the group you are trying to set, before clicking the **Group** button, by specifying a group number in the text box. Alternatively you can select the group in the **Group Definition** dialog (Refer to Figure 5).
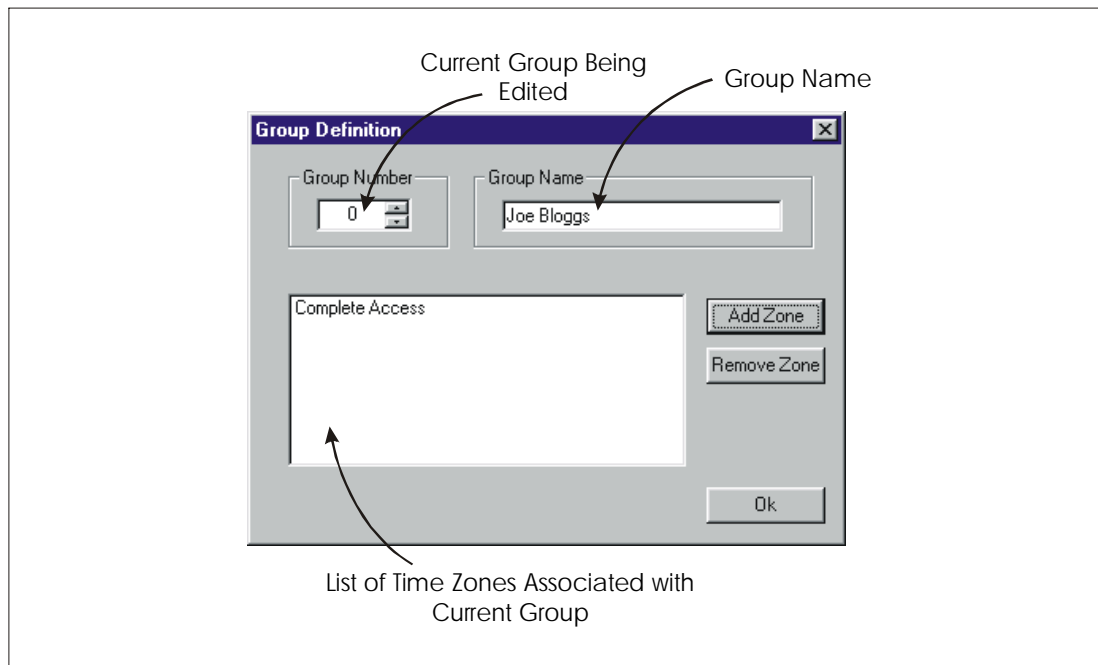
**Figure 5 - Group Definition Dialog**

Once you have selected a group you want to add or edit in one of the two methods mentioned above, you need to set the group information. A name can be attached to the group, using the text box in the **Group Name** frame. Following this, time zone information can be added to the current group. This is done by clicking the **Add Zone** button. This will open up a list box, with all the available time zones that have been defined. Two special zones are always defined - **Complete Access** and **No Access**. These zones will override any other zones that have already been added to the group. Time zones can be selected in the list box and added to the group, by double clicking the time zones (or clicking the **Select** button in the list box). Multiple time zone selections can be made at any one time. Each group can have a maximum of 8 time zones attached to it.

The group definition step should be repeated for all the groups that you want to define. A maximum of 1000 groups can be defined (0-999). Once you have finished entering or editing groups press the **Ok** button.

To view the groups that have been configured, click the **Group** button in the **View Groups** frame. This will open a **Group Viewer** dialog (Refer to Figure 6) with all the group information displayed in a list. If you want to edit a group in this list, double click on the group (or select a group and click on the **Edit Group** button) and the **Group Definition** dialog will appear.
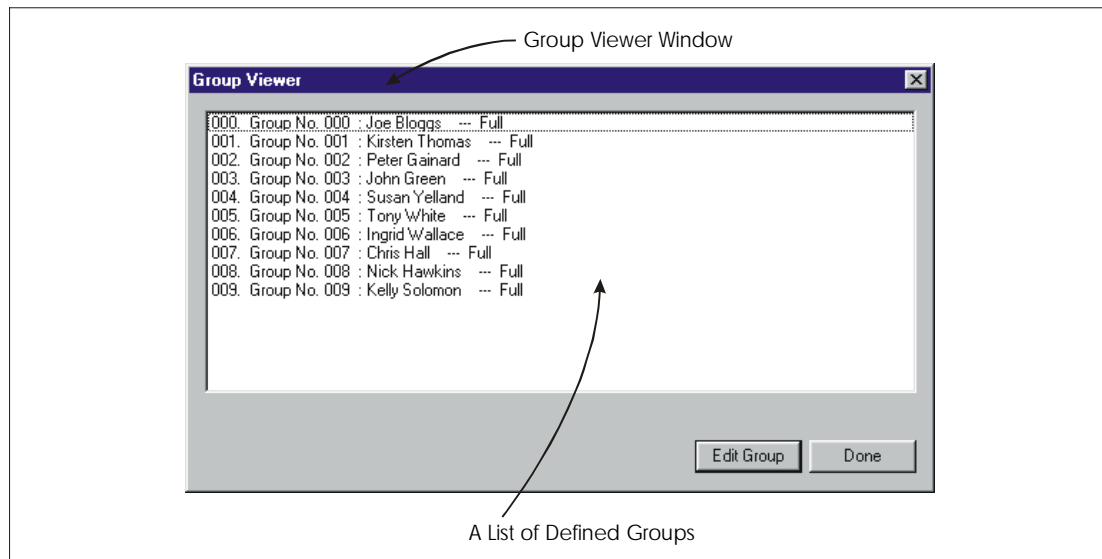
Group Viewer Window

**Group Viewer**                                               ☒

000. Group No. 000 : Joe Bloggs    --- Full
001. Group No. 001 : Kirsten Thomas    --- Full
002. Group No. 002 : Peter Gainard    --- Full
003. Group No. 003 : John Green    --- Full
004. Group No. 004 : Susan Yelland    --- Full
005. Group No. 005 : Tony White    --- Full
006. Group No. 006 : Ingrid Wallace    --- Full
007. Group No. 007 : Chris Hall    --- Full
008. Group No. 008 : Nick Hawkins    --- Full
009. Group No. 009 : Kelly Solomon    --- Full

                                    [ Edit Group ]  [ Done ]

A List of Defined Groups

**Figure 6 - Group Viewer Dialog**

If you want to delete groups, from the defined group list, you can select the groups of interest, and right click on your mouse. This will open a floating menu that allows you to copy, paste, and delete groups. Click the **Delete** command to delete the groups of interest.

In instances where you know that multiple groups will have the same time barring information, you can copy and paste time zones across groups. The best thing to do here is to firstly define the groups of interest by attaching a unique name to each of the groups. Next define time zones for one of the groups. Now open up the **Group Viewer** dialog and select the group where you have defined the time zones. Right click on the group and select the **Copy** command. This will copy the time zone information (The group name will not be copied). Once you have copied a group, select the group/s that you want to copy the time zone information to, right click and select the **Paste** command. This will update all the selected groups with the time zone information.

## *Downloading the Time Barring information to the ChronoLog*

Once the above processes are complete, the information can be downloaded to the PC. This is done by clicking the **Download** button on the main dialog. This will open a **Downloading** dialog (Refer to Figure 7). The current system date and time will be downloaded to the ChronoLog by default. If you don't want to download the time and date, deselect the **Download PC Time** option. Connect the ChronoLog to the PC on COM 1. The **PC Download** button on the <u>ChronoLog device</u> must be pressed to put the device in the PC download mode. The ChronoLog will stay in this mode for approximately thirty seconds. While the ChronoLog is in this mode, click the **Start Download** button. This will initiate the download to the ChronoLog, with the download progress indicated on the progress bar.
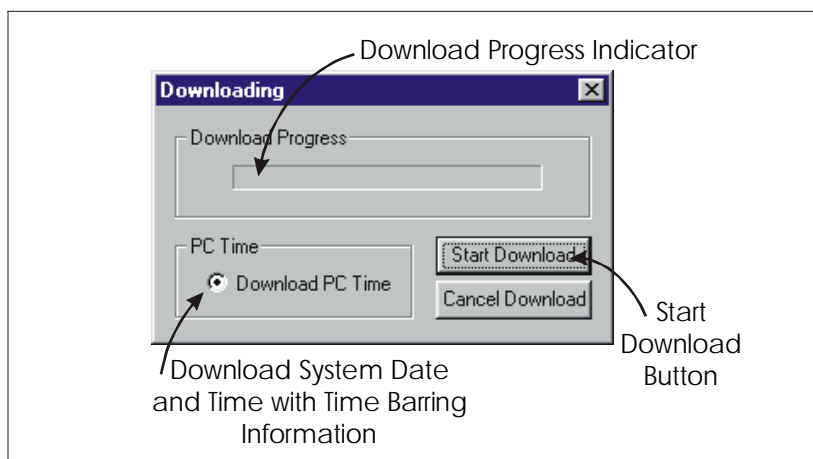


**Figure 7 - Time Barring Download Dialog**

## *Saving the Time Barring Information*

It is obviously important to be able to save the time barring information. When you click the **Save and Exit** button, the application will open a standard file dialog that allows you to select a directory and file name for the time barring information you want to save. Once you have selected a file name click the save button. The time barring information will be saved to the file, and the application will exit.

If you save the file in the installation directory with the default filename **Info.cen**, then every time you open up the application, this file will automatically be loaded. If you save the file to any other location or name it something other than **Info.cen** then the file will not automatically be loaded, and you will have to load it from within the application. To do this click the **Open Data File** button on the main dialog. This will open a file dialog where you can select the file you want to load.

In the event you want to start with an entirely new time barring configuration, then you should rename or delete the **Info.cen** file in the installation directory (if it exists). When you start the application, the program will search for the **Info.cen** file. When it can't find the file, the program will configure itself for a new time barring setup.

If for some reason you don't want to save the time barring information after configuring it, click the **Exit** button on the main dialog. The program will ask if you are sure you want to exit without saving the information. If you confirm, the program will exit.

# *ChronoLog DataLog Application*

## *Introduction*

The ChronoLog DataLog application enables upload of transactions stored in the ChronoLog memory buffer to a PC. In addition if the ChronoLog Time Barring application is used, transaction records can have **Group Names** associated with **Group Numbers.**

The application is based on a database structure, to give the user the ability to filter and sort records easily. Both simple and complex filter functions are provided to narrow down searches to obtain the data set of interest.

The database used by the application is compatible with Microsoft Access and Microsoft Excel. Thus the complex sorting and filtering functions of Access and Excel can be applied to the data set.

## *Installation*

The ChronoLog DataLog application consists of three install files. To install the application the **Setup.Exe** file must be run, (this will run the setup utility), that will guide you through the setup process.

The setup utility will prompt you to provide an install location for the DataLog executable files. By default, the install location is usually **C:\Program Files\DataLog\**, however the application can be installed anywhere.

In addition, the install utility will prompt you to provide a program group for the application. The default will suffice in most instances, however, any program group can be selected.

The application makes use of a number of shared system "**.DLL"** files. If there are other applications open when you install the application, then it is possible that an access violation will occur when the install utility tries to install "**.DLL**" files that are already in use. These access violations can be ignored. However it is preferable to shut down any applications before installing the ChronoLog DataLog software.

Note: The install utility requires certain system files to run. On some systems, these files are not initially available. The install utility will update the system with these files, and then ask if the computer can be restarted. This is not a problem, The computer should be restarted, and then the install utility can be run again.

## *Application Configuration*
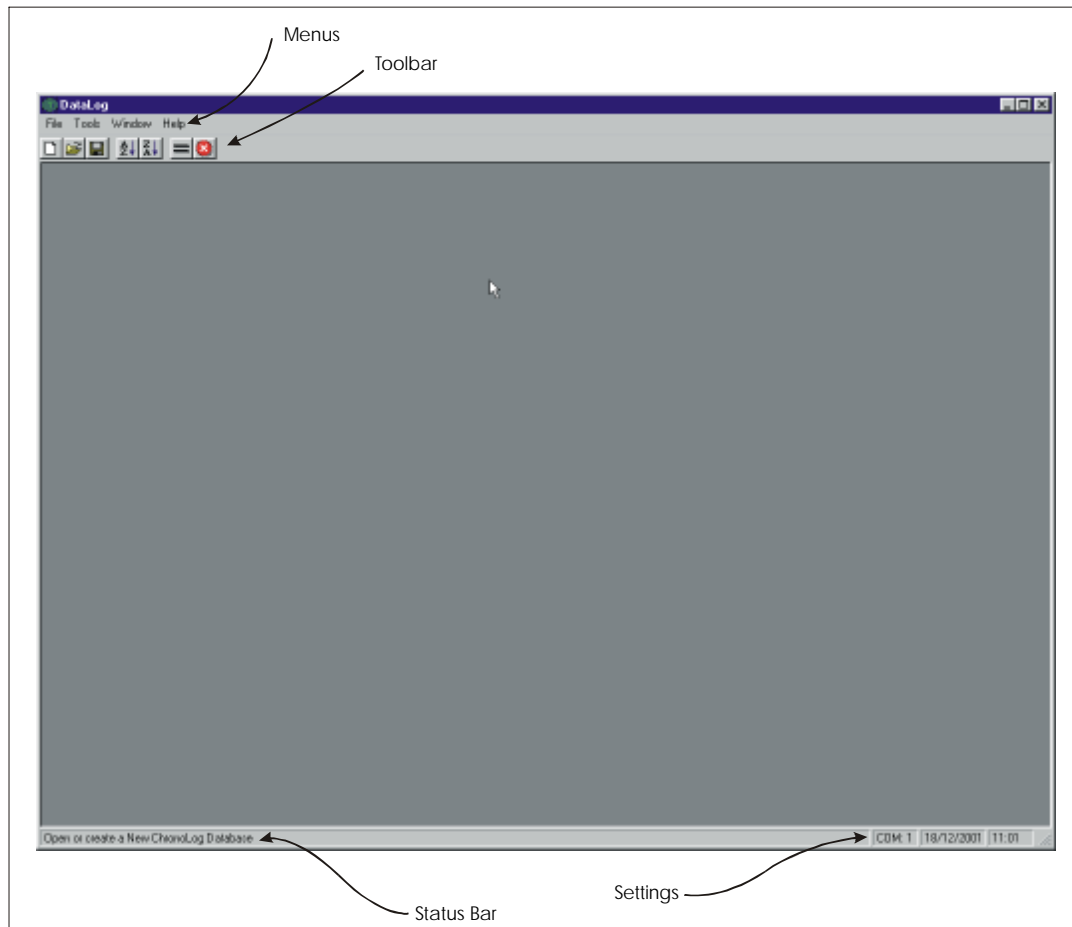


**Figure 8 - The Main Window of the ChronoLog DataLog Application**

Once the application has been installed, it can be run from the **Programs** group on the Windows **Start** menu. The application will load a splash screen, following which the main application should load (Refer to Figure 8).

## *Configuring the Output folder*

Before creating a database or uploading information from the ChronoLog, the system should be configured. The first step in the configuration is to setup where you want the temporary ChronoLog Database files to be created. This is done by selecting **Options** from the **Tools** menu. This will open the **Options** dialog (Figure 9). The dialog allows you to change the COM port, edit the temporary database path, and edit the channel associations (Refer to the section on channel associations). To change the temporary database path, either type the new path in the text box, or click the directory browser button (Refer to Figure 9) alongside the text box. This will open a window with a directory tree. The path can be selected by moving through the directory tree and pressing the **Ok** button when the correct directory is selected.
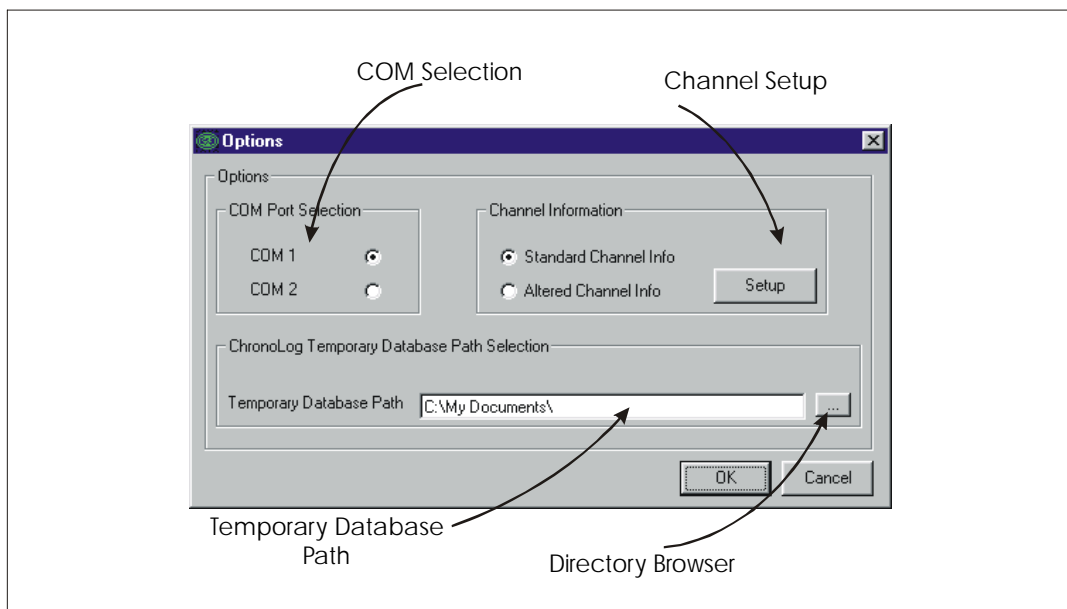
**Figure 9 - Options Dialog**

The path information is stored in the registry when the application closes. Hence, this folder will now act as the temporary database folder for all future sessions, or until you change it to something else.

## *Setting up the COM Port*

COM 1 or COM 2 can be selected in the **Options** dialog. When the application loads, information is retrieved from the registry, indicating which COM port was selected in the last session. This information is used to setup the COM port for this session.

From **ChronoLog DataLog v1.2** onwards, the COM port is dynamically changed. This means that the application will automatically try to release the old port and master the new port when a different COM port is elected in the **Options** dialog and **Ok** is clicked. For versions of the application less current than **v1.2** see the note below.

Note: For versions of the application less current than **v1.2**, if the COM port is changed the application must be shut down before the new COM port settings can take effect.

## *Database Management*

## *The Unique Database Structure*

The ChronoLog DataLog application makes use of the **Microsoft Jet Database Engine** to interpret the requests it makes on the database. The structure of the underlying database is specific to the ChronoLog application. Hence although the database engine is generic, the database structure is not. This means that when you create a new database, you must create it through the application, to ensure the correct database structure (Note that if you try to open another database in the ChronoLog environment, the operation will fail).

## *Creating a New Database*

To create a new database, either use the [ ] (**New**) button on the ChronoLog toolbar, or select the **New** command in the **File** menu. The application will open a progress window indicating the progress of database creation. Once the operation is complete, a child form will open showing a blank recordset (Figure 10). The field headings of the recordset indicate the data that will be retrieved from the ChronoLog.
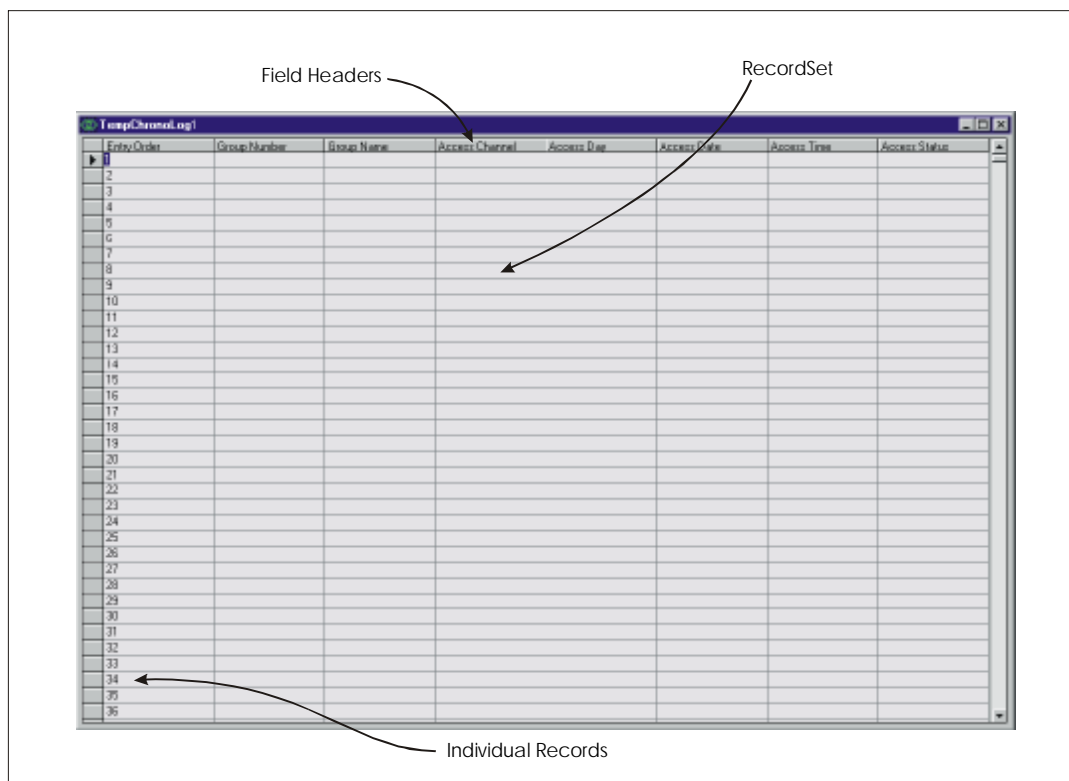


**Figure 10 - ChronoLog DataLog Recordset**

If you created a new database on a previous session and you didn't rename the database when you saved it, then the temporary database will still exist under its temporary name. If you now try to create a new database, the application will indicate that there is already a temporary database under that name, and ask you if you wish to overwrite the existing database file. If you select yes, all the information on the old

file will be lost and a new file will be created. If you select no, then the application will not create a new database. If this is the case, and you still want to create a new database, you must open the old file and save it as something else before trying to create a new database (You can either open the file in the ChronoLog application and select the **Save As** command from the **File** menu, or rename the file in the Windows Explorer environment).

## *Opening an Existing ChronoLog Database File*

To open an existing database, select the ![](open icon) (**Open**) button on the toolbar, or select the **Open** command from the **File** menu. This will show an **Open File** dialog box (Figure 11), where the directory and file you wish to open can be selected. Once the file has been selected, the application will attempt to open it. The attempt will fail if the database you are trying to open is not a valid ChronoLog database file.
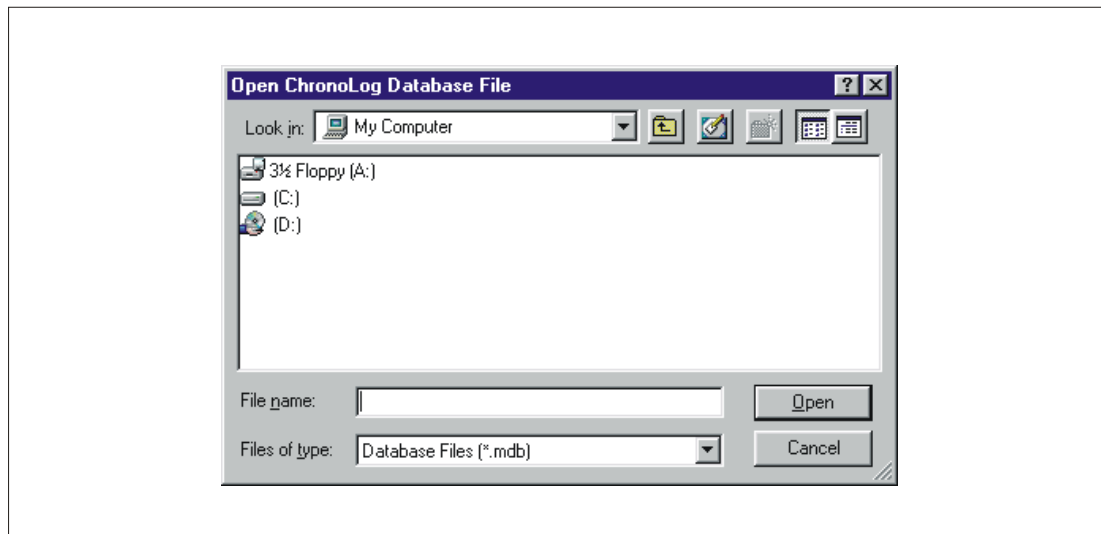


**Figure 11 - Standard File Dialog**

## *Saving a Database*

The **Save As** Command:

After working on a particular database file, you may want to save the file with a particular file name. To do this, select the **Save As** command on the **File** menu. This will open a **Save As** dialog, allowing you to specify a directory and file name to save the file. The File dialog will be much the same as that illustrated in Figure 11.

The **Save** Command:

The **Save** command is similar to the **Save As** command, except it doesn't allow you to enter a file name. It saves the file information with the current name of the file. To do this, select the **File** menu and click on the **Save** command. This will automatically save the file.

You can also use the  (**Save**) button on the toolbar

There is one instance where the above is not true, and that is when you are saving a newly created database for the first time. In this instance the **Save** command behaves the same way as the **Save As** command. i.e. The **Save** command will prompt you for a file name instead of saving the file directly.

## *Performing an Upload*

After setting up the options settings in the **Options** dialog (Figure 9), and opening or creating a new ChronoLog database, you can perform an upload from the ChronoLog to the PC.

Connect the ChronoLog to the PC using the PC cable provided. Ensure that you connect the cable to the correct COM port. Ensure that you have a database file open, and then press the printer dump button on the ChronoLog device.

The printer dump button acts as both the means to do a printer download and a PC upload. If both devices are connected, then the ChronoLog will send information to the printer and the PC simultaneously. If just the printer is connected, then information is only sent to the printer. Equally, if only the PC is connected, then information is only sent to the PC.

The printer dump button on the ChronoLog board allows the entire contents of the onboard memory to be uploaded to the PC. This is the only way to upload information to the PC. The ChronoLog is unable to send information to the PC in real time. i.e. Transaction information can not be logged to the PC every time a transaction occurs.

Once the ChronoLog printer dump button is pressed the PC should begin uploading information. The upload progress is indicated by the transaction records being dynamically updated on the recordset (Refer to Figure 10). Once all the records have been uploaded from the ChronoLog, the underlying database must be updated with the new record information. A progress dialog will indicate the progress of this database update. A final message box will indicate that the upload is complete, and that all the records have been successfully uploaded.

The illustration below shows a recordset that has been successfully uploaded. This example serves to illustrate the format of the transaction data



**Figure 12 - Recordset Example After a Successful Upload**

If there are no transactions stored on the ChronoLog onboard memory, then the application won't update the recordset since there are no new records. However, it will indicate that the upload was successful.

If the Application appears to be doing nothing after pressing the ChronoLog printer dump button, then there may be a communications problem.

## *Trouble Shooting Communication Issues with the ChronoLog*

Make sure there are no other programs open that could be mastering the COM port you are using. Some programs will not release the port even after shutting the program down. Hence you should restart your PC to make sure that all the ports have been released.

The ChronoLog can be run by connecting the device to the COM port alone. i.e. No external power source connection. However, depending on the motherboard and USART (Universal Synchronous Asynchronous Receive Transmit) chipset you are running, the ChronoLog may not run reliably with only the PC connection. You may have to connect an external power supply[1].

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[1] Refer to the section on external power supplies in the ChronoLog Documentation for supply voltages

If the external power supply doesn't appear to help, try disconnecting all power sources from the ChronoLog, and then reconnecting them and trying an upload again. You may also have to restart the application. If this doesn't solve it, and you have repeated the process several times, then it may be a hardware problem. Check the cable connections. Make sure you are on the correct COM port. If you have another device try using it on the COM port to establish if the COM port is working correctly.

If the problem persists, you either have a fundamental communications compatibility problem (PC hardware or software is incompatible with the ChronoLog System), or the ChronoLog device is damaged.

## *Sorting the Transaction Records*

Due to the database structure of the ChronoLog DataLog application, the transaction records can be sorted according to a particular field in ascending or descending order. This sorting process is not limited to the ChronoLog application, and can indeed be achieved with any generic database application (Microsoft Access, and with some manipulation, Microsoft Excel.) The generic database applications will allow powerful sorting and filtering queries against the database. The ChronoLog application will only allow simple numerical or alphabetical sorting against one or more consecutive recordset fields. This means that you can select one or more fields, but they must be one after the other. The fields will be sorted in precedence from left to right across the screen.

To perform a sort, the pertinent fields must first be selected. If you are trying to sort against one field, then you have only to click on the heading of that field. If you are trying to sort across multiple fields then you must click and drag the mouse across the heading's of the fields of interest. Notice that you can only drag across consecutive fields. You can't drag across the first two fields, leave the third one out, and then include the fourth field in your sort request.

Once the fields have been selected you can sort in either ascending or descending order.

To do this use the  and  buttons to sort in ascending or descending order respectively.

Note: If you are sorting in ascending order, and not all of the records have been used (ie. There are some blank records in the recordset.), then these records will appear at the top of the recordset. This can obscure the pertinent information. To overcome this, it is suggested that you filter the blank records out first. To do this set up a complex filter in such a way that you include the information you want, and exclude the blanks (Refer to the section on complex filters if you don't know how to use this feature).

The following example illustrates the sort feature, and how to sort across multiple fields.

*Assume you want to sort with respect to date and time in descending order. You would select the date and time fields by clicking on the date field heading and dragging your mouse across to include the time field. You would then select the **Sort in Descending Order** button on the toolbar and the fields would automatically be sorted. In terms of precedence, the first sort would sort dates. The second sort would sort the times for each unique date.*

# *Filtering*

## *Filtering on a Single Instance of Data in a Field*

As with sorting, filtering is not limited to the ChronoLog application. Generic Database applications allow complex filter queries to be performed against the database.

The ChronoLog DataLog application allows for a very simple filtering query (where one can retrieve the set of data pertaining to one instance of data occurring in a particular field), as well as a slightly more complex filter for a refined data set.

To filter against a single instance of data in a particular field, you must first select the instance of data you are interested in. To do this, simply click in the cell of the data item you want to filter against.

Now click the ▬ (**Filter**) button on the toolbar. The filter command will find and display all the instances of the data item in the particular field.

You are unable to implement compound filters with the simple filter command. This means that if you filter on an item with the simple filter, and then decide to refine the filter by filtering against an item in another field, the previous filter will clear before the new filter query is made.
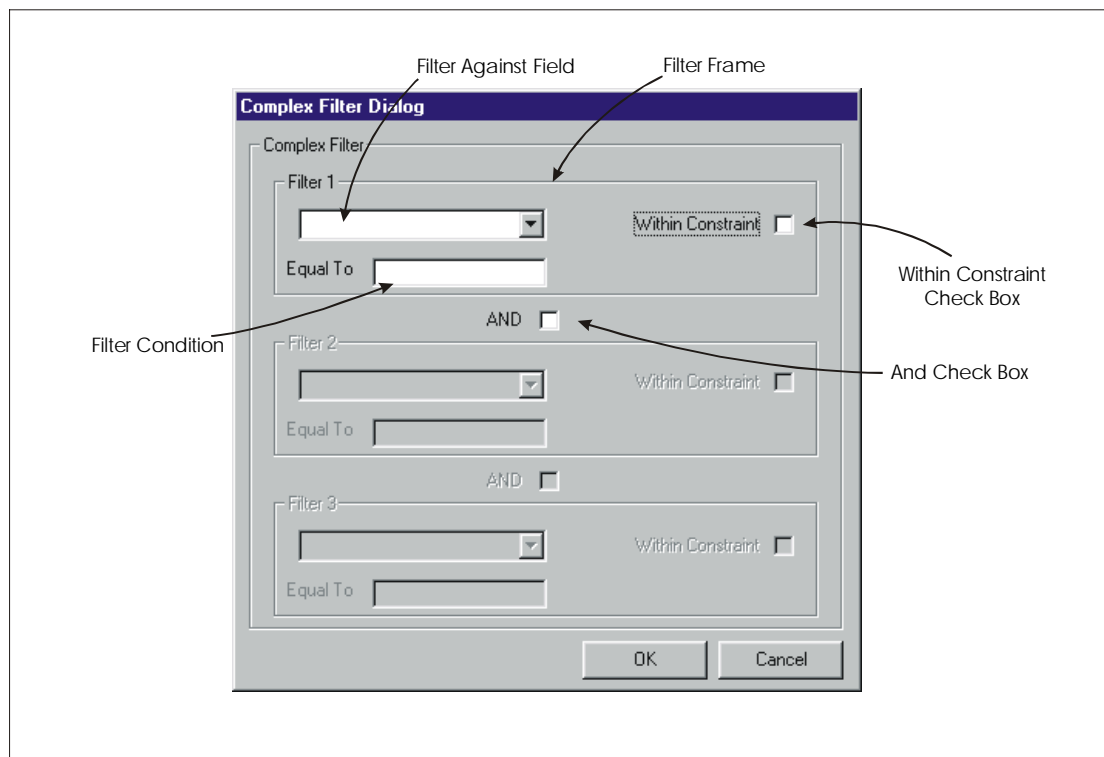
## *The Complex Filter*



**Figure 13 - Complex Filter Dialog**

The complex filter dialog (Shown in Figure 13) is accessed by opening the **Tools** menu and clicking on the **Complex Filter** command. This will open the **Filter** dialog that allows you to setup the query. You are able to setup a filter query with a maximum of 3 mutually inclusive conditions. This means that you can filter against three fields of data, and each of the conditions in each of the fields must be valid for the filter to display that transaction record (Refer to Figure 14). The condition for each of the mutually inclusive events, can be either an exact match, or within a data set range.
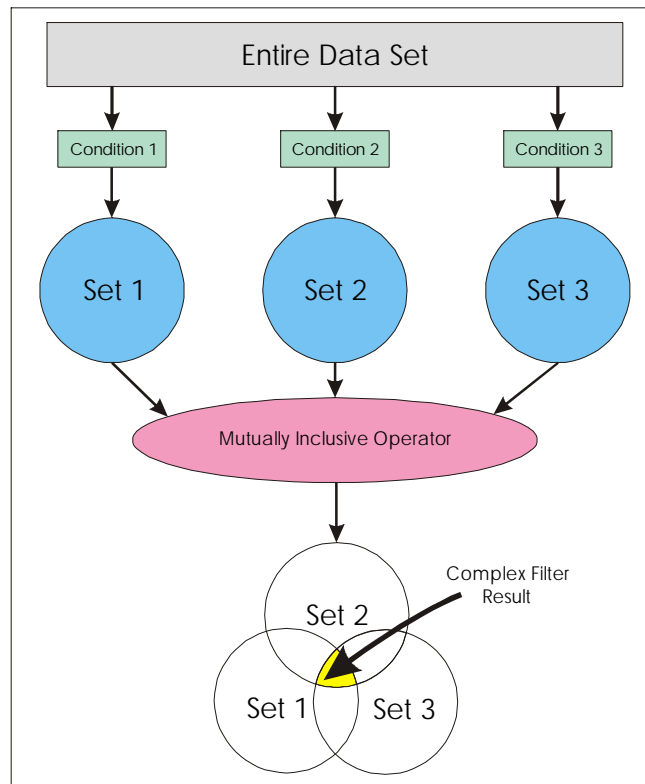


**Figure 14 - Venn Diagram of Complex Filter Logic**

To specify an event, first select a field that you want to filter against. Next select the type of condition. The **Within Constraint** option must be selected if the condition must be within a data set range.

Next specify the condition. Either an exact match, or within a range.

If you want more than one conditional set, select the **And** option below the filter frame (Refer to Figure 13). This will enable the next event frame, where the process can be repeated. Once the query has been setup to your satisfaction, press the **Ok** button.

The complex filter doesn't support compound filters. i.e. You can't filter for a data set with the complex filter, and then try to perform another filter on that data set to refine it. The first filter will clear before the second one is implemented.

When specifying conditions, the following points should be kept in mind:

- Number conditions are specified as standard numbers.

- When specifying a 'within constraint' condition that refers to a number field, the constraint will find all the numbers greater than or equal to the lower limit, and less than or equal to the upper limit. For example, suppose you want to filter for group numbers 4, 5 and 6. The lower limit would be 4, and the upper limit would be 6. Conversely, the filter would return nothing if you specified the lower limit as 6, and the upper limit as 4. This is because it is impossible to have numbers greater than or equal to 6, and less than or equal to 4 in the same data set.

- Text strings should be entered without any additional formatting. i.e. The string shouldn't be enclosed in inverted commas, etc. When entering a text string condition, the condition is <u>not</u> case sensitive.

  When specifying a **Within Constraint** condition that refers to a text field, the filter is made based on strings within alphabetical limits. For example if you wanted all the group names beginning with A, B or C, the lower constraint would be A, and the upper constraint would be C. The filter would return no values if the lower constraint was C and the upper constraint was A.

- The Access day field is handled as a text based string, and hence all the text based filter conditions apply. This is important to keep in mind when specifying a **Within Constraint** condition that refers to the day field. i.e. You can't specify a constraint where you want all the entries between Monday and Wednesday, since it will return all the values <u>alphabetically ordered</u> between Monday and Wednesday (i.e. Monday, Saturday, Sunday, Thursday, Tuesday, Wednesday).

- When specifying dates, the valid entry cases are best indicated with an example. Suppose you want to filter for all the entries that occurred on the 26 March 2001. The following would all be valid date input formats:

  26 March 2001
  26 Mar 2001
  26-03-2001
  26 03 2001
  26/03/2001
  03/26/2001 (Month and day reversed, except in ambiguous cases.)

  One must keep in mind that these input formats apply to a computer with regional date format settings set to dd-mm-yyyy. If your regional settings are different (Day and month reversed) then your input formats would be different (You would enter month first and then day). In addition, the above formats could all also be used with only the least 2 significant digits of the year (01 as opposed to 2001).

**Within Constraint** conditions for dates are handled by specifying the older date as the lower limit, and the newer date as the upper limit.

- Specifying times, is again best illustrated with an example. Suppose you want all the entries that occurred at 16:00 exactly. The following would all be valid entries for that time condition:

  16:00
  16:00:00
  4:00pm
  4:00 pm

  **Within Constraint** conditions for times are handled by specifying the older time as the lower limit, and the newer time as the upper limit.

The following example is provided to illustrate the use of the complex filter:

*Suppose you have the ChronoLog installed on the main gate of a town house complex. The system has been in use for some time, and you have just uploaded the latest gate access information to the PC. In addition you have linked the group information to the transaction database (See linking group information, if you are not familiar with the process).*

*There has been an enquiry made by the body corporate to establish whether **Joe Bloggs** entered or exited the main gate on the **27/08/01** between **18:00** and **20:00** in the evening.*

*You could establish whether or not this was true by manually processing every entry to see whether Joe Bloggs used his transmitter at this time. However it is easier to use the complex filter.*

*The first condition that needs to be in place on the complex filter is the name of the individual. Hence in the first filter frame, select **Group Name** from the drop down list box. Next specify that you want to filter for all names equal to **Joe Bloggs** in the **Equal To** text box.*

*The next condition that needs to be in place is the date of interest. First select the **And** button below the first filter frame. This will open up the second filter frame for user input. This frame should be used to select **Access Date** from the drop down list box. Enter **27/08/01** in the **Equal To** text box.*

*The last condition is the time condition. Clearly this is a within constraint condition. First check the **And** box to reveal the last filter frame. Select **Access Time** from the drop down list box. Now check the **Within Constraint** check box in the frame. This will reveal another entry box. In the **From** box, enter **18:00**, and in the **To** box enter **20:00**.*

*The conditions for the complex filter example should appear as they do in Figure 15*
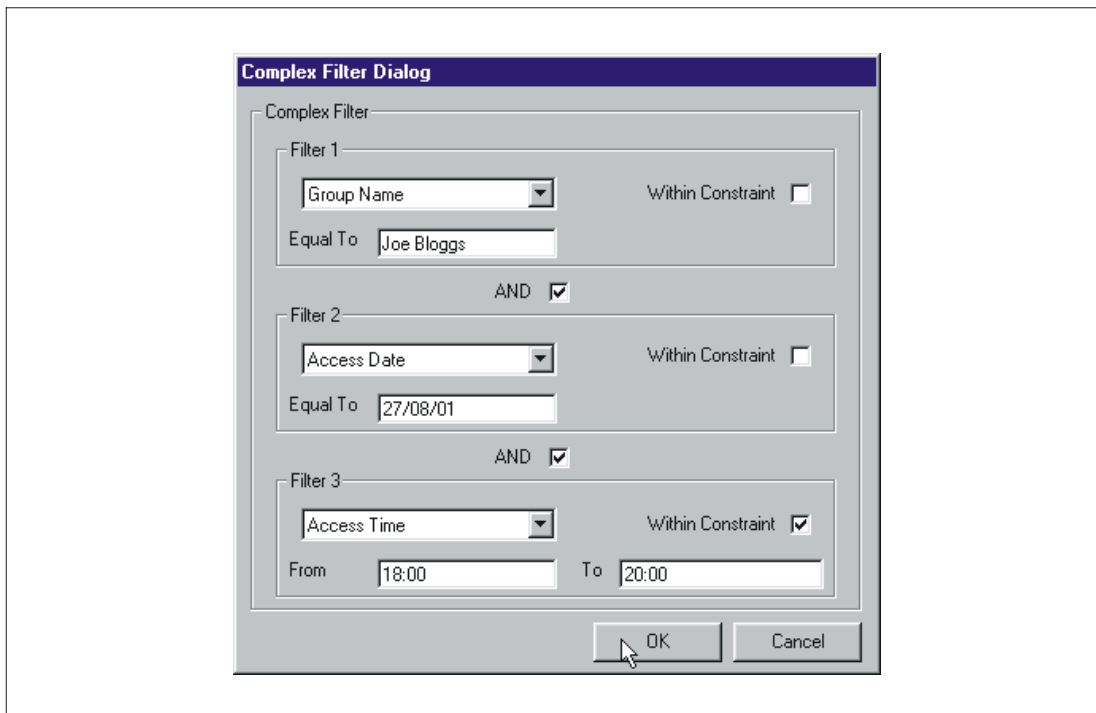
**Figure 15 - Complex Filter Example**

*Press the **Ok** button, and the recordset will indicate all the occasions where **Joe Bloggs** used his transmitter on the **27/08/01** between **18:00** and **20:00**.*

*Using the example dataset shown in Figure 17 the results of the complex filter are shown below*



**Figure 16 - Result of the Complex Filter Query on the Example Dataset**

## *Clearing the Filters*

If you have filtered for a set of data, using either of the two filtering features, and you want to return to the original set of data you can clear the filter using the clear filter command.

Either click the  (**Clear Filter**) button or select the **Clear Filter** command in the **Options** menu to clear the original filter. If there is no filter in place, and you use the clear filter command, no operation will be performed. The clear filter command will not reset the ordering of the data if you have sorted the data.

## *Linking Group Information*

The concern with Data logging systems is that it is often costly to implement name logging information on the data logger. This is because a large amount of non-volatile memory is required to store the name information. Hence in most cases a unique number is associated with the name information. However, if you are trying to analyse the transaction recordset, it is very difficult to identify who gained, or was denied access based on a unique number alone. The hardware of the ChronoLog is no different.

However, if the group naming information is configured correctly on the ChronoLog time-barring application, then one is able to automatically link the group name information to the uploaded data record. This is extremely useful to anyone who is trying to monitor the access transactions.

As mentioned above the first step in setting up the group link, is to ensure the integrity of the information in the ChronoLog Time-barring application. This means that the **Group Name** field must be filled in for every group that you intend to be able to identify by name. This group information is stored in a file with a "**.CEN**" extension when you close the ChronoLog Time-barring application.

When you have uploaded a new data record, and you want to link the name information to it, you must open the **Tools** menu and select the **Link Group Information** command. This will open a standard file dialog box allowing you to specify the file that you saved with the "**.CEN**" extension. Once you have found and selected the file, the application will begin to link the group name information. The progress will be indicated on a progress bar. Once the information is linked the **Group Name** field will be automatically updated with the group name information. If you use this database file for future uploads, the previous transaction record will be deleted, but the linked information will not. Hence, once the latest upload is complete, the group name information will automatically be displayed.

Figure 17, below illustrates linked group name information



**Figure 17 - Recordset Example with Group Name Information Linked**

## *Channel Associations*

When you are making use of more than one of your channels on the SupaSmart receiver, it is often useful to know what the channels are controlling. For example you may have **Channel 1** associated with the main gate, **Channel 2** associated with the garage door, and **Channel 3** associated with the panic button on your alarm system. When you do a transaction upload it is difficult to remember exactly what channel is associated with what. This is where the channel association feature comes in.

To implement channel associations, open the **Options** dialog by selecting the **Options** command in the **Tools** menu. On the **Options** dialog select the **Altered Channel Info** check box (Refer to Figure 9) and click on the **Channel Setup** button. This will open a **Channel Setup** dialog (Figure 18) with the ability for you to alter the way the channel information is displayed when you do an upload.



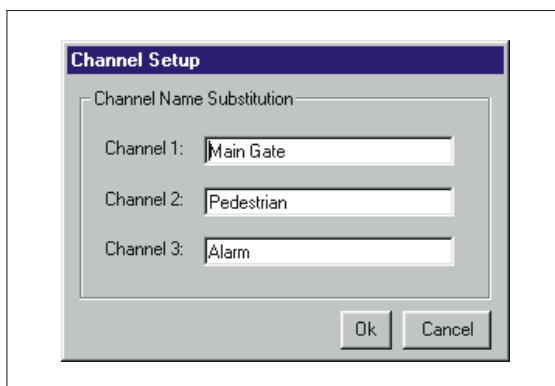**Figure 18 - Channel Association Dialog**

Edit the channel fields and click **Ok** when you are done. The channel associations are now assigned. Every time you upload transaction data from the ChronoLog the channel information will be displayed with the new associations.

Note: Existing transaction uploads cannot have new channel associations defined.

# The ChronoLog DataLog Lite Application

## *Introduction*

The ChronoLog DataLog Lite is intended to be used in instances where the operating system of the PC doesn't have the data access drivers to support the database in the DataLog application. The DataLog Lite is text based. This means that sorting and filtering functionality, associated with most database structures, is not available.

You can view the text file that is created in any application that will read a "**.txt**" file. Programs like **Notepad**, **WordPad**, **Word**, etc will all open the file. In addition you can import the file into **Microsoft Excel**, which will then give the flexibility that a database structure has.

## *Installation*

The ChronoLog DataLog Lite application consists of three install files. To install, the application the **Setup.Exe** file must be run. This will run the setup utility that will guide you through the setup process.

The setup utility will prompt you to provide an install location for the DataLog Lite executable files. By default, the install location will probably be **C:\Program Files\DataLogLite\**.  However the application can be installed anywhere.

In addition, the install utility will prompt you to provide a program group for the application. The default will suffice in most instances. However any program group can be selected.

The application makes use of shared system "**.DLL**" files. If there are other applications open when you install the program, then it is possible that an access violation will occur when the install utility tries to install the "**.DLL**" files that are already in use. These access violations can be ignored, however it is easier to shut down any applications before installing the ChronoLog DataLog Lite software.

Note: The install utility requires certain files to run. On some systems, these files are not initially available. The install utility will update the system with these files, and then ask if the system can be restarted. This is not a problem, the system should be restarted, and then the install utility must be run again.
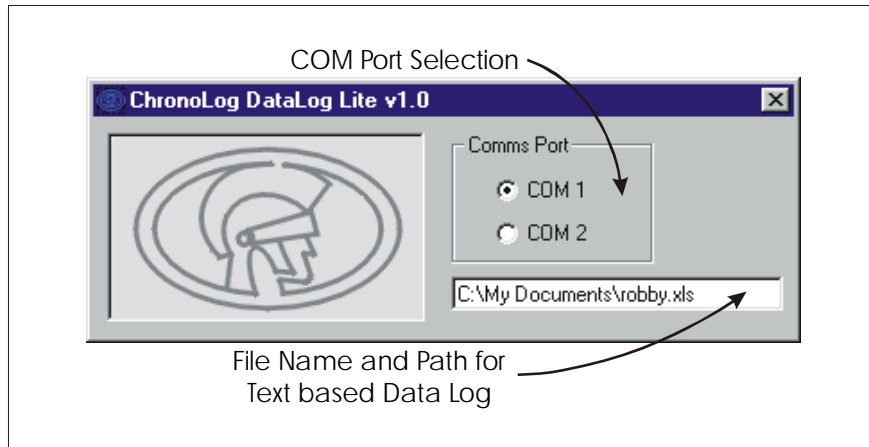
## *Setting up the Application*



**Figure 19 - ChronoLog DataLog Lite Application**

When the application opens, a small dialog (As shown in Figure 19 above) allows you to select a COM port and file name for the text file that is generated when you perform an upload from the ChronoLog device. Select the COM port that the ChronoLog is connected to. Select a file by clicking on the text box. This will open a file dialog that allows you to select a directory and filename to store the text based information.

## *Initiating an Upload*

To implement an upload, press the **Printer Dump** button on the ChronoLog device. If this is successful, and the ChronoLog is communicating with the PC, a progress dialog box will open to indicate the progress of the upload. Once this is complete the text file can be opened in a text viewer.

# *Operating System Compatibility*

*43*

| | ChronoLog Time Barring | ChronoLog DataLog | ChronoLog DataLog Lite |
|---|---|---|---|
| Windows 95 | á | | á |
| Windows 95 with Microsoft Office | á | á | á |
| Windows 98 | á | á | á |
| Windows 98 with Microsoft Office | á | á | á |
| Windows 2000 | á | á | á |
| Windows 2000 with Microsoft Office | á | á | á |
| Windows NT | á | | á |
| Windows NT with Microsoft Office | á | á | á |

# *Printer Compatibility*

The ChronoLog device has been tested and confirmed to work with the following printers:

## *Epson Printers*

LX-300
LX-400

## *Seikosha Printers*

SP-2400
SL-270