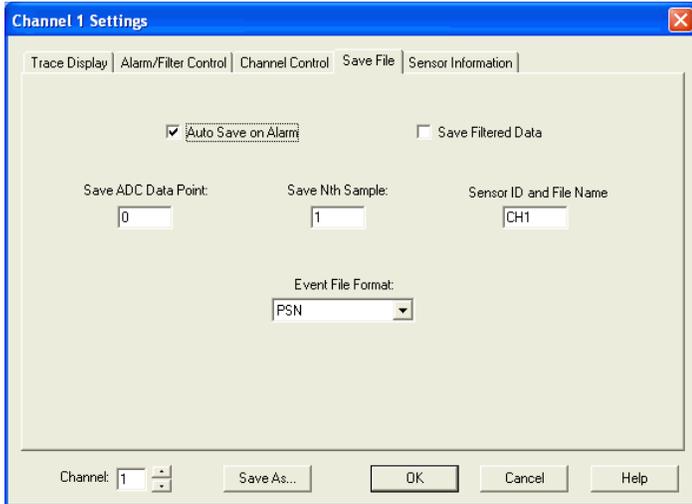


3.1.2.4 Save File

The **Save File** tab of the *Channel Settings* dialog box is used to control various parameters used when WinSDR saves Event files.



**Auto Save on Alarm Check Box:**

If checked, WinSDR will save an Event file for this channel when an Event is detected. (Detection of “Events” is controlled by settings under the Alarm tab.)

**Save Filtered Data Check Box:**

If checked, and if a digital low-pass and/or high-pass filter is enabled in the Alarm/Filter Control tab of the channel settings dialog box, the filtered data will be used for display and saved in the daily record file. **Please Note: When this option is enabled, you will lose any data outside of the filter cutoff frequencies. It's best to save the raw data and do post filtering on the PSN event files using a program like WinQuake.**

**Save ADC Point Edit Box:**

Used to filter automatically saved Event files. If a value other than 0 is entered, the peak data count during an alarm for

this channel must be higher than the number entered in this field before an Event file will be saved. A value of 0 disables Event file filtering. This setting should only be used if more than one channel is being recorded.

**Save Nth Sample Edit Box:**

When WinSDR automatically saves an Event file it will use this number for the Save Nth value. Save Nth controls the sample rate of the Event file.

**Sensor ID and File Name Edit Box:**

Sets the sensor ID string and Event file extension from this channel. The sensor ID string should be 3 to 6 characters long.

**Event File Format List Box:**

Sets the Event file output format. Currently WinSDR can save Event files in the following formats: PSN, SAC Binary and MiniSeed (with Steim 2 encoding).

**Note that, unlike the raw data Record files, which are automatically purged after the number of days specified in the System Settings | General tab, Event files are retained indefinitely. If too many Event files are saved, either manually or automatically, the storage device to which they are directed (in System Settings | Directories) can, eventually be filled. This means that you must periodically monitor the amount of disk space used by the Event files and delete files that you no longer want or move them to another medium, like CD-ROM or DVD-ROM.**

**The Event files are saved in the root directory specified in System Settings | Directories | Event Files. WinSDR will create a new sub-directory in this**

root directory each month named *ymm*, where *y* is the current year and *mm* is the current month (e.g. March 2007 would be named 703). The Event files stored in the monthly sub-directory are named in the format:

date.time.sensor name.file type

For example, the file:

070312.235457.ch3.psn

Holds the Event data for:

March 12, 2007

23:54:57UTC

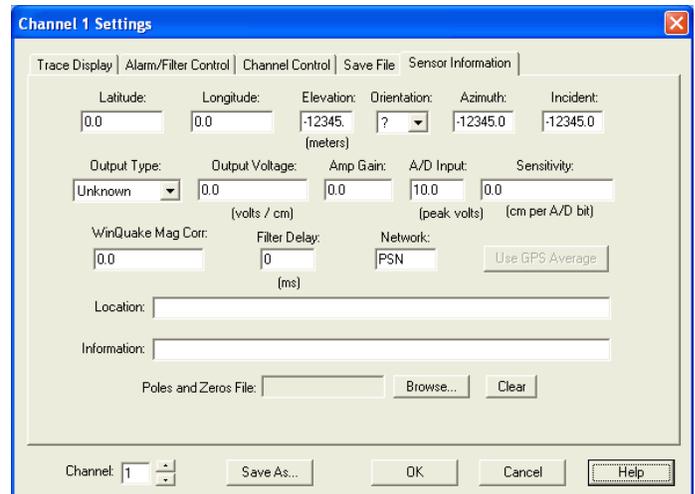
from channel 3

in PSN format

The Sensor Name (ch3 in the example) is specified in the Sensor ID and File Name field of this tab. This is a 6-character alphanumeric value that defaults to CHx, where x is the channel number. You may want to add an identifier that is unique to your site to the channel number. For example, if you are at the University of Colorado at Boulder, you could prefix “UCB” to the channel number to get “UCBCH1”, or more simply “UCB1”.

### 3.1.2.5 Sensor Information

The **Sensor Information** tab of the *Channel Settings* box is used to control various parameters regarding your specific VolksMeter instrument and site. Several of the parameters do not apply to the digital VolksMeter sensor and are so noted below.



If you have the GPS Time Reference option, see “Use GPS Average”, below, to set the Latitude, Longitude and Elevation values.

#### *Latitude Edit Box:*

Enter the Latitude of the sensor in degrees and decimal point not in degrees, minutes, seconds. Use a negative number for the Southern Hemisphere.

#### *Longitude Edit Box:*

Enter the Longitude of the sensor in degrees and decimal point not in degrees, minutes, seconds. Use a negative number for the Western Hemisphere.

#### *Elevation Edit Box:*

Elevation of the sensor in meters above or below (negative number) sea level. Use -12345.0 if unknown.

**Orientation Select Box:**

Set to Z for a vertical sensor, N for a North-South oriented sensor, E for a East-West sensor or ? if unknown. **The VolksMeter standard pendulum sensors are oriented horizontally, so “N” or “E” are the options.**

**Azimuth Edit Box:**

Sensor azimuth angle in degrees with respect to the north through east. For a N-S or vertical sensor use 0. For a E-W sensor use 90. Set to -12345.0 if unknown.

**Incident Edit Box:**

Sensor incident angle in degrees with respect to vertical. For a N-S or E-W sensor use 90. For a vertical sensor use 0. Set to -12345.0 if unknown. **Use 90 for the VolksMeter.**

**Output Type Select Box:**

Select the sensor output type to either *Acceleration*, *Velocity*, *Displacement* or *Unknown*. See below, *Additional Information*, *Sensor Sensitivity Field*, for more information. **The Raw data channels from the VolksMeter are acceleration. The Integrated data channels are (pseudo) velocity.**

**Output Voltage Edit Box:**

Output voltage of the sensor in volts per centimeter of movement. **Leave at 0.0 for VolksMeter, not applicable.**

**Amp Gain Edit Box:**

Gain of the amplifier/filter channel that is between the sensor and the ADC input. **Leave at 0.0 for VolksMeter, not applicable.**

**A/D Input Edit Box:**

Specifies the maximum peak input voltage of the ADC channel. For the PSN-ADC-SERIAL this is usually set to 10 volts. **Leave at 10.0 for VolksMeter, not applicable.**

**Sensitivity Edit Box:**

The sensitivity of the sensor if known. See below for more information. **Leave at 0.0 for VolksMeter, not applicable.**

**Mag Corr Edit Box:**

A floating point number used by WinQuake to calculate magnitude. See the WinQuake documentation for more information.

**Filter Delay Edit Box:**

Used to compensate for any propagation delay through the low-pass filter for this channel. The number entered is in milliseconds. See below, *Additional Information*, *Sensor Filter Delay Field*, for more information. **Leave at 0 for VolksMeter, not applicable.**

**Network Edit Box:**

Network affiliation. Example: PSN. **Unless you specifically join or create a named network of sensors, leave this field at PSN or change to blank.**

**Use GPS Average Button:**

This button will set the sensor's latitude, longitude and elevation fields to the average GPS position data. (Remember, this is actually the location of the GPS Receiver.) This button will only be enabled if you have performed the following steps:

- 1) You have installed and activated the GPS Time Reference option (section 2.8), and
- 2) You have clicked on **Settings | GPS | GPS Location**, checked the **Enable Location Averaging** check box and accumulated at least 100 readings to average (value in Average Number box). (The GPS Location box must be closed in order to open any other box.)

When the button is enabled, clicking it will copy the current averaged latitude, longitude and elevation to the appropriate fields in this box.

Once the fields are set, you should re-open the **GPS Location** box and uncheck the **Enable Location Averaging** check box. This will eliminate unnecessary GPS traffic on the VolksMeter connection to the support computer.

**Location Edit Box:**

Sensor location string. Typically, this is the permanent site City, State and Country. Please keep as short as possible. Example: **Redwood City, CA USA**

**Information Edit Box:**

Sensor information string. This is the sensor type or name. Example: **VolksMeter II**

**Poles and Zeros File:**

If specified, WinSDR will save the Poles and Zeros (frequency response information) contained in the file into the PSN Event file. See [insert filename here] for an example of a Poles and Zeros file. Use the *Browse* button to locate the file and the *Clear* button to delete the file.

## Additional Information

**Sensor Sensitivity Field:**

The Sensor Sensitivity field number depends on the Sensor Output Type field. If the sensor output is acceleration, sensitivity is in cm/sec/sec per A/D bit, if the output is velocity cm/sec per bit and if the output is displacement in cm per bit. This web page can be used to calculate the sensitivity number if you know the output voltage level of your sensor.

The Channel Settings need to be specified for each channel that you will be recording; the Raw Data channels and the Integrated Data channels. On a 2-channel VolksMeter up to four sets of Channel Settings should be specified.

### 3.1.3 Other Operational Settings

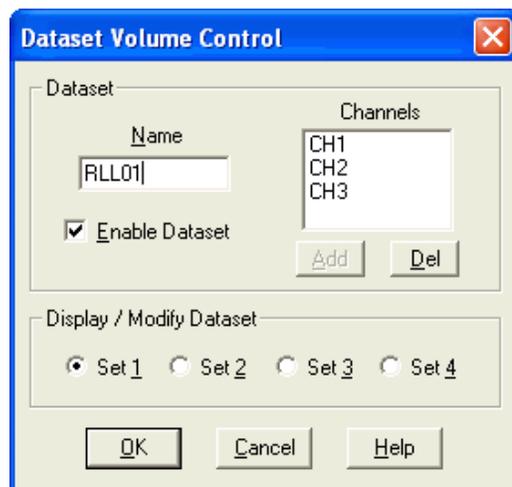
Once the System Settings and the Channel Settings are specified, there are still a variety of miscellaneous parameters that should be specified, depending on which additional functions that you wish WinSDR to perform. The following sections describe these settings.

Additional functions that are enabled with these settings include:

- Saving multiple-channel Event files
- Linking WinSDR to WinQuake
- Setting parameters for the Real-Time and Single Line display windows
- Uploading Event files to FTP servers
- Creating GIF Images of Record files and uploading them

#### 3.1.3.1 Saving Multiple-Channel Event Files

Up to now, the operational parameters that have been specified support the creation and saving of Event files that contain only a single channel of data. If events occur on more than one channel, which is usually the case, then a separate Event file is saved for each channel. The **Dataset Volume Control** settings specify how multiple channels are saved in a single Dataset Event file.



**Note:** WinQuake version 2.9.2 or higher is required to view Dataset files.

The **Dataset Volume Control** dialog box is used to specify what channels are saved in dataset files. This dialog box is opened using the **File | Dataset Volume Control** menu item. Up to four datasets can be defined and each dataset can have two or three channels associated with the dataset.

**Name Edit box:**

Enter the dataset name. This is used as the file extension when WinSDR creates the dataset file name. The format of the file name is the event file start time, dataset name and then "PSN".  
Example: 030208.123023.LCL15B.PSN

**Channels list box:**

Lists the channels associated with the dataset.

**Enable Dataset checkbox:**

Used to enable or disable the dataset volume. If enabled, WinSDR will save the channels in the dataset volume. If turned off, the channels will be saved as individual Event files.

**Add button:**

Opens the **Add Channel** dialog box. This dialog box lists the available channels that can be added to the dataset. Up to three channels can be added to the dataset list.

**Del button:**

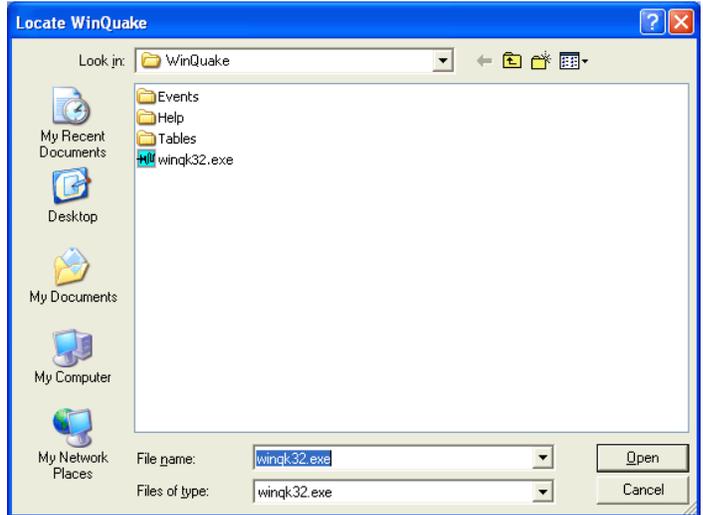
Used to delete the currently selected channel in the **Channels** list box.

**Sel 1 to Sel 4 radio buttons:**

Used to display and modify one of the four dataset volumes that can be created in WinSDR.

### 3.1.3.2 WinQuake Location

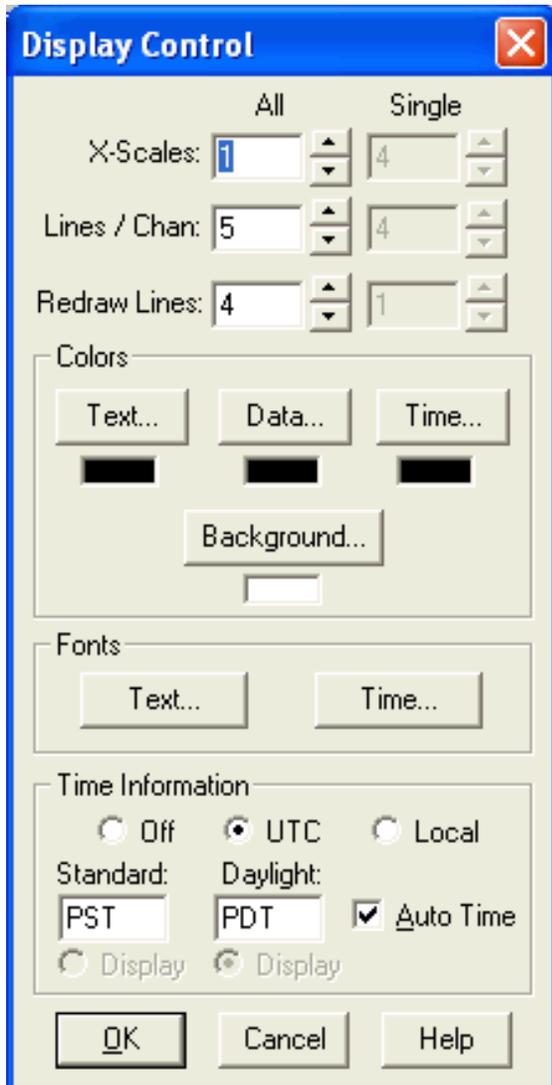
Used to specify the location of the WinQuake program file winqk32.exe. WinSDR can open WinQuake after saving event files if it knows the location of this file. See the Save Event dialog box for more information.



This dialog box is activated from the menu bar with **File | WinQuake Location**. If WinQuake is installed using the default location, it will be located in the directory **C:\Program Files\WinQuake\**.

3.1.3.3 Real-Time Display Parameters

The appearance of the Real Time display is specified by clicking on the menu bar **Settings | Display** or pressing the **[F5]** key.



The terms **All** and **Single** below refer to the two display modes offered by the Real-Time display. The mode is selected by clicking on **All** or **CHx** in the **View** menu or the context menu of the display window. When in **All** mode, every channel enabled for **All** display (**Display on Main Window** box checked under **Channel Settings | Channel Control**; see section 3.1.2.3) will be displayed and the display appearance is controlled by the **All** parameters. When only channel **x** is specified, by selecting **CHx**, then only that channel is displayed and the display appearance is controlled by the

**Single** parameters.

**All Edit Boxes:**

**X-Scale:**

Trace speed, in minutes per line, when WinSDR is displaying **all** channels.

**Lines per Channel:**

Number of lines to display when displaying **all** channels.

**Redraw Lines:**

Number of lines to redraw after the trace reaches the end of the screen. Must be less than the **Lines per Channel** setting. Entering 0 will disable any history information from being displayed.

**Single Edit Boxes:**

**X-Scale:**

Trace speed, in minutes per line, when WinSDR is displaying a single channel.

**Lines per Channel:**

Number of lines to display when displaying a single channel.

**Redraw Lines:**

Number of lines to redraw after the trace reaches the end of the screen. Must be less than the **Lines per Channel** setting. Entering 0 will disable any history information from being displayed.

**Colors Group Box:**

**Text Button:**

Opens the **Colors** dialog box. The dialog box is used to change the color of the text part of the status information displayed on the bottom of the window.

**Data Button:**

Opens the *Colors* dialog box. The dialog box is used to change the color of the data part of the status information displayed on the bottom of the window.

**Time Button:**

Opens the *Colors* dialog box. This dialog box is used to set the color of the GMT/UTC time information on the left hand side of the Real-time and Replay windows. This button will be enabled if UTC or Local Time is selected in the Time Information group box.

**Background Button:**

Opens the *Colors* dialog box. This dialog box is used to change the background color of the window.

**Fonts Group:****Text Button:**

Opens the *Font* dialog box. This dialog box is used to change the font of the status information text.

**Time Button:**

Opens the *Font* dialog box. This dialog box is used to change the font of the time information on the left hand side of the Real-time and Replay windows. This button will be enabled if UTC or Local Time is selected in the Time Information group box.

**Time Information Group Box:****Off Button:**

Turns off the time information text on the left hand side of the Real-time and Replay windows.

**UTC Button:**

Enables the time information text on the left hand side of the Real-time and Replay windows. UTC time is displayed.

**Local Button:**

Enables the time information text on the left hand side of the Real-time and Replay windows. Local time is displayed.

**Standard Time Edit Box:**

Enter your local Standard Time Zone abbreviation in this edit box. Example: PST (Pacific Standard Time) or EST (Eastern Standard Time).

**Standard Time Display Button:**

If checked, and the *Auto Time* check box is not checked, WinSDR will always display the Standard Time string in the GIF image files, if both GMT and Local time are being displayed, and in the Real-time window.

**Daylight Time Edit Box:**

Enter your local Daylight Time Zone abbreviation in this edit box. Example: PDT (Pacific Daylight Time) or EDT (Eastern Daylight Time).

**Daylight Time Display Button:**

If checked, and the *Auto Time* check box is not checked, WinSDR will always display the Daylight Time string in the GIF image files, if both GMT and Local time are being displayed, and in the Real-time window.

**Auto Time Check Box:**

If checked, WinSDR will automatically change the Standard and Daylight string based on the current day and time. If not checked, WinSDR will display the Time Zone string based on the *Display Time* check boxes. WinSDR gets the current Standard / Daylight Saving Time mode from Windows.

**OK Button:**

Closes the dialog box. New information entered will be used by WinSDR.

**Cancel Button:**

Closes the dialog box without making any changes.

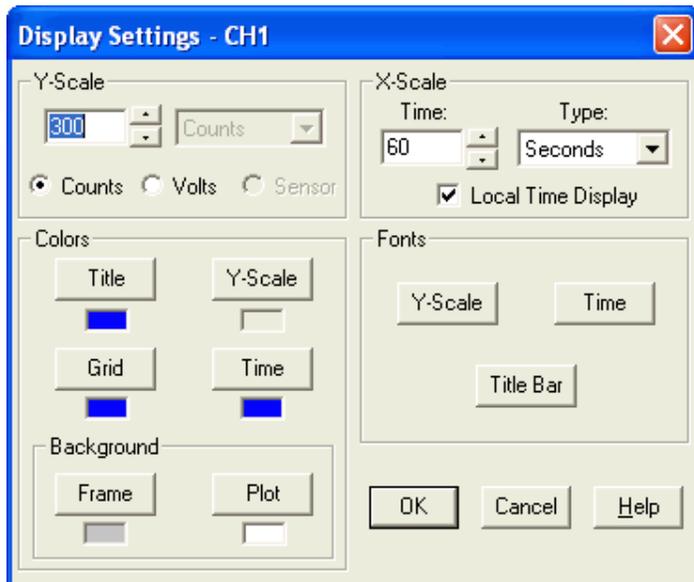
**Help Button:**

Opens the Help file.

The Y-scale and other parameters for the individual channel traces are controlled by the **Trace Display** tab of the specific **Channel x Settings** boxes. See section 3.1.2.1.

3.1.3.4 Single Line Display Parameters

The appearance of the **Single Line** display is specified by clicking on the menu bar **Settings | Single Line Display**, selecting **Display Settings** from the context menu of the Single Line display, or



pressing **CTRL + [F5]**. If the Single Line display window is not open, the **Single Line Display Settings** menu item will be grayed out and the **CTRL + [F5]** keyboard shortcut will do nothing. When the **Single Line Display Settings** box is opened, it will control only the parameters of the channel that is being displayed in the window. This channel number will be shown on the title bar of the **Display Settings** box. To edit the parameters of a

different channel, you must close the Settings box, change the channel being displayed and then reopen the Single Line Display Settings box.

**Y-Scale Group:**

**Y-Scale Edit Box:**

Used to control the Y-Scale range. For a Y-Scale setting of 1000, the range on the display is  $\pm 1000$ . This value is also controlled by the position of the Vertical Scroll Bar slider on the Single Line display window. The Edit Box allows setting the Y-Scale value to values between the standard increments of the Vertical Scroll Bar slider.

**Counts Button:**

If selected, the Y-Scale will be displayed in A/D counts. **This is the appropriate choice for the VolksMeter sensor, where the display is in CDC counts.**

**Volts Button:**

If selected, the Y-Scale will be displayed in volts into the A/D converter channel. (FYI: Since the VolksMeter uses a direct Capacitance to Digital Converter, there really are no "volts" to display. However, if Volts are selected, the Volt to Count conversion factor depends on the current ADC Bits value (Channel x Settings | Channel Control) and the A/D Input Peak Volts (Channel x Settings | Sensor Information). For example, if the ADC Bits are 16, giving a possible data range of  $\pm 32768$  CDC counts, and the A/D Peak Input value is 10.0, the default, then 10.0 Volts will correspond to  $\pm 32768$  counts.)

**Sensor Button:**

Currently not implemented.

**X-Scale Group:**

**Time Edit Box:**

Used to control the X-Scale (time). Enter the number of seconds, minutes or hours to display across the Single Line plot. The X-Scale value is also controlled by the **Last**

item on the Single Line display context menu.

**Type List Box:**

Used to set the X-Scale time to seconds, minutes or hours.

**Local Time Display:**

If selected, local time will be displayed instead of UTC/GMT time.

**Colors Group:****Title Button:**

Opens the *Colors* dialog box. This dialog box is used to change the color of the title of the display.

**Y-Scale Button:**

Opens the *Colors* dialog box. This dialog box is used to change the color of the Y-Scale text.

**Grid Button:**

Opens the *Colors* dialog box. This dialog box is used to change the color of the plot grid lines.

**Time:**

Opens the *Colors* dialog box. This dialog box is used to change the color of the time or X-Scale text.

**Frame:**

Opens the *Colors* dialog box. This dialog box is used to change the color of the frame around the plot window.

**Plot:**

Opens the *Colors* dialog box. This dialog box is used to change the color of the window background.

**Fonts:****Y-Scale Button:**

Opens the *Fonts* dialog box. This dialog box is used to change the font of the Y-Scale text.

**Time Button:**

Opens the *Fonts* dialog box. This dialog box is used to change the font of the Time or X-Scale text.

**Title Bar Button:**

Opens the *Fonts* dialog box. This dialog box is used to change the font of the plot title bar.

**OK Button:**

Closes the dialog box. New information entered will be used by WinSDR.

**Cancel Button:**

Closes the dialog box without making any changes.

**Help Button:**

Opens the Help file.