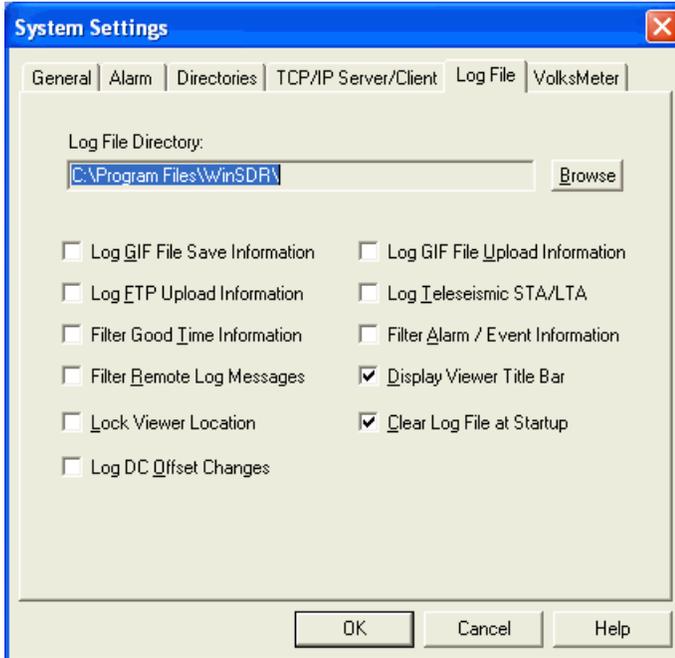


### 3.1.1.5 Log File

The **Log File** tab of the *System Settings* dialog box is used to control the location of the winsdr.log file, what information will be saved in the log file and displayed in the Log File Viewer window.



#### **Log File Directory:**

Sets the directory where the debug log file (winsdr.log) will be located. This directory can be located on a local or remote drive. Use the **Browse** button to change or create the new directory.

#### **Log GIF File Save Information Check Box:**

If checked, WinSDR will save more GIF file generation messages in the log file.

#### **Log GIF File Upload Information Check Box:**

If checked, WinSDR will save more GIF file upload information messages in the log file.

#### **Log FTP Upload Information Check Box:**

If checked, WinSDR will save FTP upload information messages in the log file for both GIF file and event file uploads.

#### **Log Teleseismic STA/LTA Check Box:**

Displays and saves teleseismic trigger information in the log file.

#### **Filter Good Time Information Check Box:**

If checked, WinSDR will filter out normal time reference information messages generated by the VolksMeter Interface Board. Time error messages will not be filtered out..

#### **Filter Alarm / Event Information Check Box:**

If checked, WinSDR will filter out messages from the alarm / event detection process.

#### **Filter Remote Log Messages:**

Used when WinSDR is running in the TCP/IP Client mode. If checked, log messages generated at the WinSDR server system will be filtered from the local client's log file and display window.

#### **Display Viewer Title Bar Check Box:**

Toggles the Log File Viewer title bar on or off. By turning the title bar off, the viewer occupies less room on the desktop. When the title bar is turned off, the viewer can be moved by placing the mouse on the frame window and pressing and holding the left button. The title bar can also be toggled by double clicking on the window frame.

#### **Lock Viewer Location Check Box:**

If checked, the Log File Viewer will move with the main WinSDR window. If not checked, the viewer will stay in the same location on the desktop when the main WinSDR window is moved.

#### **Clear File at Startup Check Box:**

If checked, WinSDR will delete the current log file at program startup.

#### **Log DC Offset Changes:**

If checked, WinSDR will calculate the DC offset of each channel and display the offset number in the Log File Viewer and write the offset number to a file called Offset.log. A typical entry in the offset log file looks like this:

12/27/06,04:52:42,LCTST,-1123784

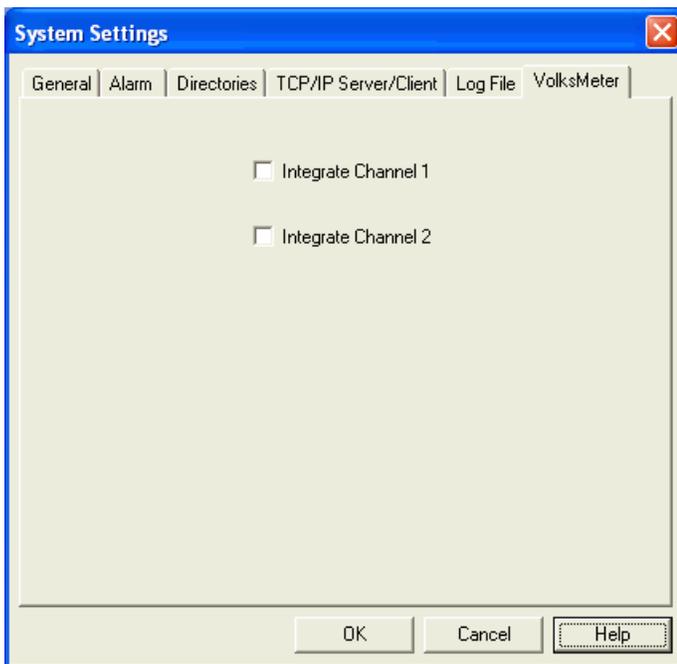
The line contains the Date, Time, Sensor ID

and DC offset in CDC (VolksMeter) counts.

[this column intentionally left blank]

### 3.1.1.6 VolksMeter

The **VolksMeter** tab of the *System Settings* dialog box is used to enable integration of the VolksMeter data. Integration of the raw **acceleration** data produces **pseudo-velocity** data on a separate channel to better display and detect teleseismic events. This tab of the dialog box will only be accessible if WinSDR is collecting data from a VolksMeter.



#### ***Integrate Channel 1:***

Enables integration of channel 1 data. If 1 channel recording is specified in **System Settings | General, Channels to Record**, the integrated data will be on channel 2. If **Channels to Record** is set to 2, the integrated data (for channel 1) will be on channel 3.

#### ***Integrate Channel 2:***

Enables integration of physical channel 2 data. If data integration for channel 1 is enabled the integrated channel 2 data will be on channel 4. If integration for channel 1 is not enabled the integrated channel 2 data will be on channel 3.

### 3.1.2 Channel Settings

Each data channel has its' own collection of settings. These settings are available for viewing and editing in the **Channel x Settings** dialog box (where **x** is the channel number).

The Channel x Settings box may be accessed by pressing **Ctrl + x** (where **x** is the number key corresponding to the channel number, e.g. **Ctrl + 1** will bring up the Channel 1 Settings box. Also **Menu Bar Settings | x: CHx** will bring up the box for channel **x**. If the Real-Time display is on top, then **Alt + x** will bring up the box for channel **x** (**Alt + x** will do nothing when the Single Line display window is on top). When **Ctrl + x** is used, the box defaults to the Alarm/Filter Control tab. When any of the other methods are used, the box defaults to the Trace Display tab.

The Channel x Settings dialog box has several buttons along the bottom edge that are common to each tab:

#### **Channel Spin Control:**

Changes the current channel number.

#### **Save As Button:**

Used to save the current channel settings to a file. The channel settings file should end in *.ini*.

#### **OK Button:**

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

#### **Cancel Button:**

Closes the dialog box without making any changes to the channel settings.

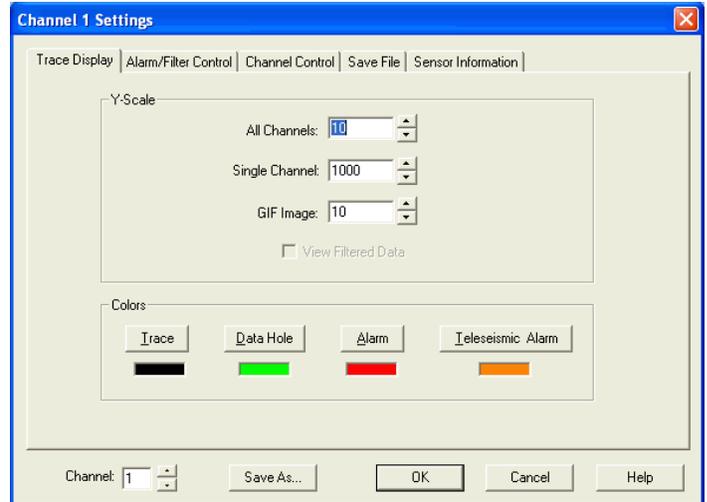
#### **Help Button:**

Opens the on-line documentation

We will now describe the functions of each tab.

#### 3.1.2.1 Trace Display

The **Trace Display** tab of the *Channel Settings* dialog box is used to control the trace Y-Scale and colors.



#### **Y-Scale Group Box:**

##### **All Edit Box:**

Sets the vertical (amplitude) compression / expansion factor of the trace when the display window is displaying *all* channels. 1 = no compression or expansion. A positive number will compress and a negative number will expand the data.

##### **Single Edit Box:**

Sets the vertical (amplitude) compression / expansion factor of the trace when the display window is displaying *only* this channel. 1 = no compression or expansion. A positive number will compress and a negative number will expand the data.

##### **GIF Edit Box:**

Sets the vertical (amplitude) compression / expansion factor of the trace when WinSDR creates GIF file images of the data. 1 = no compression or expansion. A positive number will compress and a negative number will expand the data.

**View Filtered Data Check Box:**

If checked, WinSDR will display the filtered data instead of the raw data from the Interface Board. This check box will be disabled if the high-pass and low-pass filters are not enabled.

**Colors Group:**

**Trace Button:**

Sets the normal trace color for this channel.

**Data Hole Button:**

Used by the Replay window to indicate a hole in the data. The first minute of data after a time hole in the record file will be this color.

**Alarm Button:**

Sets the trace color when the channel is in an alarm or triggered state.

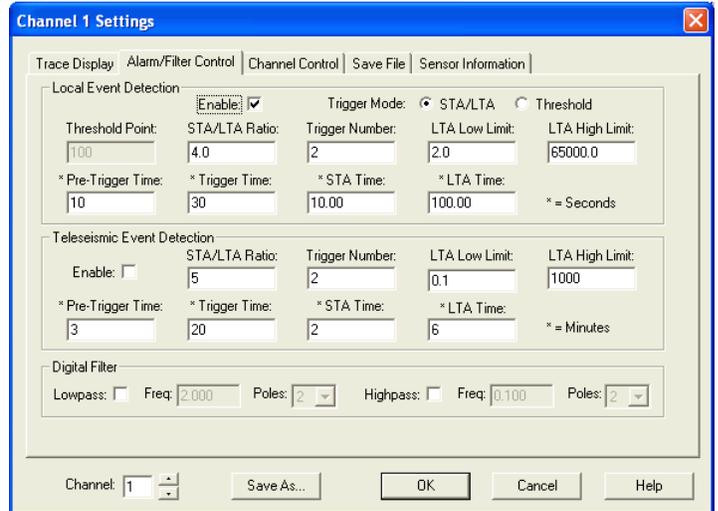
**Teleseismic Alarm Button:**

Sets the trace color when the channel is in a teleseismic event alarm or triggered state.

**We suggest that you specify unique, distinguishable colors for the Traces if you are recording / displaying more than one channel.**

3.1.2.2 Alarm / Filter Control

The **Alarm/Filter Control** tab of the *Channel Settings* dialog box is used to control event detection and digital filter parameters. If you



want WinSDR to automatically recognize and save local and teleseismic events in the Event File directory, you must set up trigger parameters to allow WinSDR to recognize these events. The actual parameters depend on your specific noise environment and the types of events you are interested in. We suggest that you start with the default values and then adjust them according to your needs and the results you are getting. Of course you can monitor and review the recorded data (up to the day limit of the Purge Record Files you specified in System Settings) and manually save any events of interest.

**Local Event Detection Group Box:**

**Enable Check Box:**

If checked, WinSDR will enable triggering and alarm functions for the channel based on the **Triggering Mode**.

**Triggering Mode:**

**STA/LTA** (Short/Long Term Averaging) triggering will be enabled if this button is selected or **Threshold** triggering will be enabled if this button is selected.

**Threshold Point Edit Box:**

Used for simple amplitude alarm triggering. Sets the threshold for the selected channel, if the alarm feature is enabled. Enter a positive number above your normal background noise level.

**STA/LTA Ratio Edit Box:**

Sets the STA/LTA threshold point. See WinSDR STA/LTA Triggering for more information.

**Trigger Number Edit Box:**

This field is used for both simple threshold (amplitude) and STA/LTA triggering modes. Sets the number of data points that must exceed the Threshold Point or STA/LTA Threshold to trigger an alarm and auto save the event file(s). A number between 20 and 50 should be fine for amplitude triggering and 2 to 4 for STA/LTA triggering. See WinSDR STA/LTA Triggering for more information.

**LTA Low Limit Edit Box:**

Sets LTA minimum value. See WinSDR STA/LTA Triggering for more information.

**LTA High Limit Edit Box:**

Sets LTA maximum value. See WinSDR STA/LTA Triggering for more information.

**Pre-Trigger Time Edit Box:**

Sets the time in seconds the channel stays in the pre-trigger state. See WinSDR STA/LTA Triggering for more information.

**Trigger Time Edit Box:**

Sets the time in seconds the channel stays in an alarm or triggered state. See WinSDR STA/LTA Triggering for more information. This field is used for both simple threshold (amplitude) and STA/LTA triggering modes.

**STA Time Edit Box:**

Sets the STA average time, in seconds. Fractions of a second can be entered. See WinSDR STA/LTA Triggering for more information.

**LTA Time Edit Box:**

Sets the LTA average time, in seconds. Fractions of a second can be entered. See WinSDR STA/LTA Triggering for more information.

**Teleseismic Event Detection Group Box:****Enable Check Box:**

If checked, WinSDR will attempt to detect teleseismic events.

**STA/LTA Ratio Edit Box:**

Sets the STA/LTA threshold point. See WinSDR STA/LTA Triggering for more information.

**Trigger Number Edit Box:**

This field is used for both simple threshold (amplitude) and STA/LTA triggering modes. Sets the number of data points that must exceed the Threshold Point or STA/LTA Threshold to trigger an alarm and auto save the event file(s). A number between 20 and 50 should be fine for amplitude triggering and 2 to 4 for STA/LTA triggering.

**LTA Low Limit Edit Box:**

Sets LTA minimum value.

**LTA High Limit Edit Box:**

Sets LTA maximum value.

**Pre-Trigger Time Edit Box:**

Sets the time in minutes the channel stays in the pre-trigger state.

**Trigger Time Edit Box:**

Sets the time in minutes the channel stays in an alarm or triggered state.

**STA Time Edit Box:**

Sets the STA average time, in minutes.

**LTA Time Edit Box:**

Sets the LTA average time, in minutes.

**Digital Filter Group Box:**

**Lowpass Check Box:**

Enables lowpass filtering of the data going to the alarm / event detection process.

**Lowpass Frequency Edit Box:**

Sets the lowpass filter cutoff frequency.

**Lowpass Poles:**

Sets the number of poles, or the steepness of the filter, used to attenuate the incoming data.

**Highpass Check Box:**

Enables highpass filtering of the data going to the alarm / event detection process.

**Highpass Frequency Edit Box:**

Sets the highpass filter cutoff frequency.

**Highpass Poles:**

Sets the number of poles, or the steepness of the filter, used to attenuate the incoming data.

**Once again, setting the Digital Filter parameters depend on your environment and the types of events you are interested in.**

**As starting points, we suggest that Raw Data channels may be Lowpass filtered at 0.5 Hz to provide a “cleaner” trace (or none) and Highpass filtered at 0.01 Hz to keep the trace always visible on the displays (removing the effects of secular drift such as that due to temperature changes). You may achieve a display on the Integrated**

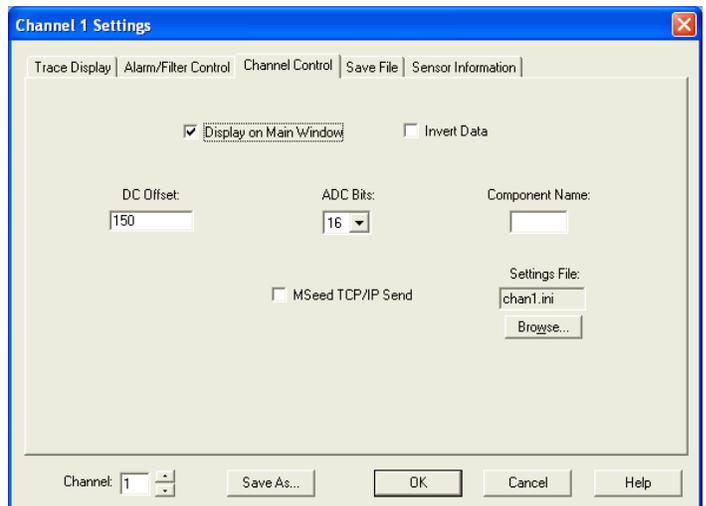
**Data channels that is similar to that of Broadband Force-Feedback instruments, such as those used by the USGS, by setting both the Lowpass and Highpass filters to the same value, such as 0.08 Hz. Note that the Highpass filter is permanently enabled on Integrated Data channels, however you may change the default frequency (.05 Hz) and the number of poles (1).**

**Since the Raw Data channels are always saved as such, integration and other filtering may be applied to the saved data after the fact, in WinQuake and other analysis applications.**

**Note the effect that Digital Filtering has on the data that gets saved: Raw Data from the instrument gets saved as raw data regardless of the Digital Filter parameters (the filtering affects raw data only in the display windows. Integrated Data (pseudo-velocity) is saved after filtering.**

3.1.2.3 Channel Control

The **Channel Control** tab of the *Channel Settings* dialog box is used to control various parameters of the selected channel.



***Display on Main Window Check Box:***

Enables or disables the displaying of the selected channel on the real-time window when “all” channels are being displayed. Note: Data is still recorded if the channel is not displayed and event files will be produced when the system detects an event. The Replay mode can also be used to extract event files.

***Invert Data Check Box:***

Inverts the data for this channel.

***DC Offset Edit Box:***

Used to correct for any DC offset on this channel.

***ADC Bits Select Box:***

Selects how many CDC Bits to get from the Interface Board. For the VolksMeter sensor the options are 16 to 24 bits.

***MSeed TCP/IP Send Check Box:***

If checked, WinSDR will send data to a TCP/IP client when the client requests MiniSeed packets.

***Component Edit Box:***

Sensor Component Name. Used to describe the sensor. Example: BHZ or SHN

***Settings File:***

Used to select the settings file for this channel. Use the ***Browse*** button to select a new \*.ini file.

**Rate)** will be discussed in section 3.2.

**Unless you plan to have multiple standard settings for these values, there is normally no reason to change the default Settings File name. Any settings you change under this or any of the other Channel Settings tabs are saved automatically to the specified Settings File when you click the OK button at the bottom of the box.**

**As described in Chapter 2, the critical fields under this tab are the ADC Bits and DC Offset values, which should already be set to their initial operating values. If the instrument settles further over time, it may be necessary to adjust the DC Offset value to compensate. The eventual setting of the ADC Bits value (and the Sample**