

WTS SOFTWARE GUIDE

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1 OVERVIEW

This document describes the use of the WTS Software available from Sherborne Sensors Ltd.

2 INSTALLING SOFTWARE

Install either or both pieces of software by double clicking the setup file(s). This will install the software on your PC running Windows XP, Vista or Windows 7.

3 WTS LOG 24 – 24 CHANNEL LOGGER

This section describes the use of the 24 channel “WTS Log 24” logger.

This information can also be found in help file included in the software.

This software works in Windows XP, Vista and Windows 7 and allows the viewing and logging of data from the WTS range of sensors.

3.1 How To Connect

To receive readings from the acquisition modules the computer needs to be connected to a WTS base station. Depending on the base station type this connection may be USB or serial.

The USB type (WTS-BSu) need only to be connected to a USB socket and does not need external power.

The WTS-BSi has serial as well as USB connections. Refer to the base station manual to configure this module.

The correct interface needs to be selected in the Configure Workspace Window depending on the connected base station.

3.2 Workspaces

This logging software uses Workspaces. Workspaces are complete descriptions of the number of channels, the communications settings and the individual settings for each channel.

Workspaces can be loaded and saved and will completely change the configuration of the logging software.

3.3 Main Window

The main window shows an LCD display mimic for each of up to 24 channels. The window is resizable but the contents just arrange themselves to fit without resizing.



Each channel is displayed with a title, the LCD mimic showing the value and a Zero button.

A red battery symbol will be visible if the module reports low battery.

A 5 bar indicator shows the link quality. More bars lit equates to a better signal.

If communications with a module is lost the display turns red and the value is shown as -----



Pressing the Zero button will immediately tare the display so that the current value shows zero. You can remove a zero by holding the Shift key and clicking the Zero button again or by editing the Workspace. A zeroed display will show an asterisk at the top left.

NOTE: Some channels may show a button with Reset instead of Zero as a caption. These channels are peak or trough capture channels. See Configure Workspace Window

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Menu Items

File

Open workspace - Displays a file open dialog window to allow you to select a previously saved workspace file. These files have a .lws extension. Once a workspace is opened it will overwrite all existing workspace settings.

Save Workspace - Displays a file save dialog window to allow you to save the current workspace.

Exit - Close the program.

Edit

Configure Workspace - Opens the Configure Workspace Window . This is where you configure the logging software.

Sleep & Wake

Wake - Wake ALL modules on the same channel.

Sleep - Broadcast a sleep command to ALL modules on the same channel.

Logging

Start Logging - Start logging to a file. This will open a file save dialog window to allow you to select the name and destination of the log file. For log file formats and other information see Logging.

Stop Logging - Stops a previously started log.

View Last Log - This will try and open the last logged file with the application that is associated with the .csv extension. On most computers this is Microsoft Excel.

About

Opens an about window which gives information on software and driver versions.

3.4 Configure Workspace Window

This is where you configure the entire display and logging experience. Once configured the workspaces can be saved and later loaded so that everything you need to repeat a previous log setup can be recalled instantly.

Configure Workspace

Interface: **USB** | Title:

COM Port: | Baudrate: | Radio Channel: | Basestation Address: | Channels: | Log Interval (ms): Keep Awake

Channel	Description	Data Tag	Format	Tare	Time...	Default	Underload	Overlo...	Function
1	WTS Eng 1	D362	0.000...	0	15	-9999999	-9999999	9999999	None
2	Channel 2	0002	00.000	0	3	0	-9999999	9999999	None
3	Channel 3	0003	00.000	0	3	0	-9999999	9999999	None
4	Channel 4	0004	00.000	0	3	0	-9999999	9999999	None

Data Tag: | Title: | Timeout: | Default Value:

Format: | Tare Value: | Underload: | Overload: | Function:

Notes:

Interface - Select either USB or Serial depending on the type of base station connected.

Title - Enter a title for this workspace. This will appear in the title caption of the main window.

COM Port - Select the COM port that the base station is connected to.

Baud rate - Select the baud rate that the base station is configured to. This can have a big effect on the achievable log rates. You may need to increase the baud rate for fast acquisition speeds.

Radio Channel - Select the radio channel that matches the acquisition devices. When you close this window the base station will be switched over to the selected channel.

Basestation Address - Select the number address of the connected basestation. This is only useful for cases where multiple basestations are connected. The default of 1 will be suitable in most cases.

Channels - Select the number of channels you want to connect to. This can range from 1 to 24. As you change the number of channels you will see that the number of lines in the channel list change.

Log Interval - Set the desired interval between logs in milliseconds.

Notes - Any notes you enter here are just for your reference and can be seen when you next open this dialog window.

Channel List - This list shows one line for each channel. To edit the settings just click on a line. The fields below will be updated to show the settings of the selected channel.

Channel - This just indicates the channel number.

Description - Enter a caption to appear on the main window and in the column header of the logged data.

Data Tag - Enter the data tag of the data you want to be associated with this channel. If you are using the SUM function you can leave the Data Tag as zero.

Format - Specify a format for the main window display and also to format the data recorded into the log file. Just indicate the decimal point position and number of decimal places by using a period and zero characters. For example: 0.00 or 000.00000

Tare Value - If you had clicked the zero button on the main window the value used as the tare would be shown here. i.e. this value is subtracted from the value read from the module to give the value displayed and logged. You can manually zero this to remove the zero or enter a manual offset value.

Timeout - Enter a time in seconds, that when exceeded with no incoming signal from this module, causes any logged data to log the Default value and also to display this channel in solid red background with ----- shown instead of a value.

Default - If no data is received from this channel this is the value that will be logged to the file.

Underload - Enter a net limit below which the channel display will flash red.

Overload - Enter a net limit above which the channel display will flash red.

Function - Here you can select a function to apply to this channel.

None - No function. Value is displayed as received.

Sum Previous Channels - This will show the sum of all previous channels. The data tag entry will be ignored. You can add multiples of these and each will sum all channels from the first channel or the last sum display up to the current channel.

Peak Capture - The channel will only display the peak value (max) from the designated module. The button for this channel has a Reset caption and clicking this will reset the displayed peak to the current module value.

Trough Capture - The channel will only display the trough value (min) from the designated module. The button for this channel has a Reset caption and clicking this will reset the displayed peak to the current module value.

Filter Light - A light filter will be applied to the designated module value. This will smooth sharp transients.

Filter Medium - A medium filter will be applied to the designated module value. This will smooth sharp transients but slow down changes.

Filter Heavy - A heavy filter will be applied to the designated module value. This will smooth out the display at the expense of slow signal changes..

Press the OK button when finished. Please note that the changes will only affect the current session and will be lost when you close the program unless you choose to Save Workspace from the File menu on the main window.

3.5 Logging

In the workspace you specify the log interval. Assuming this rate can be attained then at each interval the data for all channels is recorded to the log file.

The program logs data to a file with a .csv extension. This is a comma separated value file which is most commonly opened with Microfoft Excel.

The columns/fields are

Date, Time, Elapsed mS, Channel1, Channel2...

Where:

Date - Always formatted as DD/MM/YY

Time - Always formatted as HH:MM:SS

Elapsed mS - Indicated the elapsed milliseconds from the start of the log. This provides an easy X-axis for creating charted data.

Channelx - There follows a variable number of columns depending on the number of channels configured in the workspace. This will be formatted as specified by the workspace.

Example:

Date,Time,Elapsed mS,Channel 1,Channel 2,Channel 3,Channel 4
02/06/2010,13:30:47,4742,0,0,0,0

4 WTS VIEWER – SINGLE CHANNEL VIEWER / LOGGER

This section describes the use of the single channel “WTS Viewer” logger. This software works in Windows XP, Vista and Windows 7 and allows the viewing and logging of data from the WTS range of sensors.

4.1 How To Connect

To receive readings from the acquisition modules the computer needs to be connected to a WTS base station. Depending on the base station type this connection may be USB or serial.

The USB type (WTS-BSu) need only to be connected to a USB socket and does not need external power.

The WTS-BSi has serial as well as USB connections. Refer to the base station manual to configure this module.

4.2 Main Window

The main window shows an LCD display mimic for a single channel.



Viewing data providers on channel: dropdown – Select the radio channel that matches the acquisition devices.

Data Tag List - The devices within range are shown in this window when either the ‘Wake All’ or ‘<<Refresh’ button is clicked.

Data Tag Value - Displays the output of the device with the Data Tag highlighted (in the above example device with data tag D36E has an output of 0.0038). Click on another available data tag to see its value.

A multi bar indicator shows the link quality. More bars lit equates to a better signal.

Decimal Places to Display: dropdown - Changes the display to the selected number of decimal places.

<<Refresh – Refreshes the Data Tag List during a work session (in case additional devices are now within range).

Wake All - Wake ALL modules on the same channel.

Sleep All - Broadcast a sleep command to ALL modules on the same channel.

Sleep Viewed - Broadcast a sleep command to the module selected on the display.

Zero - Clicking the Zero button will immediately tare the display so that the current value shows zero. You can remove a zero by clicking the Zero button again.

Start Log - Start logging to a file. This will open a file save dialog window to allow you to select the name and destination of the log file. For log file formats and other information see Logging.

Stop Logging (viewable when 'Start Log' has been clicked) - Stops a previously started log.

View Last Log - This will try and open the last logged file with the application that is associated with the .csv extension. On most computers this is Microsoft Excel.

4.3 Logging

The program logs data to a file with a .csv extension. This is a comma separated value file which is most commonly opened with Microfoft Excel.

The columns/fields are

mS Elapsed mS, Value, Time Stamp

Where:

Elapsed mS - Indicated the elapsed milliseconds from the start of the log. This provides an easy X-axis for creating charted data.

Value – Output from the displayed device. *

Time Stamp - Always formatted as DD MONTH YYYY HH:MM:SS:μS

Example:

mS Elapsed,Value,Time Stamp
3105,0.0053432,25 August 2011 10:41:34:250
8114,0.0053461,25 August 2011 10:41:39:250
13121,0.0053432,25 August 2011 10:41:44:265

* NOTE – The software will log ONLY the device displayed, is a different data tag is selected during logging; this new device will now be logged.