## Events

PeakSimple gives you control of up to eight independent external events, or hardware events. A hardware event is the operation of a device external to the data system but integral to the analytical run. A hardware event can be a valve rotation, opening or closing a split vent, activation of an autosampler sequence, or operation of an electrical switch at a precise moment during the run. PeakSimple also gives you control over a comprehensive list of non-hardware events, such as integration events, data system signal control events (zero, reverse), and DOS command events. Events are controlled automatically with **Event tables** that use the system clock, which starts at 0:00 with each run. Using PeakSimple **Event tables** enhances the reproducibility of the resulting chromatograms by ensuring repeatable actuation of devices from run to run.

The eight timed event output signals are called relays, and are named A-H. For example, when an SRI GC is equipped with a 10-port gas sampling valve, its rotation/actuation is controlled by a relay: relay OFF = valve in the LOAD position; relay ON = valve in the INJECT position. The relay assignments for any given instrument are printed on the side panel (right hand side for GCs, left-hand side for HPLCs).


RELAY FUNCTIONS		
		(DEFAULT / ACTIVE)
A	SAMPLE SOLENOID #1	(CLOSED / OPEN)
B	SAMPLE SOLENOID #2	(CLOSED / OPEN)
C	SAMPLE SOLENOID #3	(CLOSED / OPEN)
D	SAMPLE SOLENOID #4	(CLOSED / OPEN)
E	TRAP #1 HEAT	(OFF / ON)
F	TRAP #2 HEAT	(OFF / ON)
G	VACUUM PUMP	(OFF / ON)
H	VALVE #1 POSITION	(LOAD / INJECT)

This list of assigned relay functions is printed on the side of a TO-14 GC customized with 4 sample solenoid valves.

Relays/pump	
A	SPLIT VENT ON/OFF
B	TRAP BAKE SETPOINT
C	TRAP#2 HEAT
D	VOA VIAL SHAKER
E	SPARGE GAS ON/OFF
F	TRAP#1 HEAT
G	VALVE#1 LOAD/INJECT
H	VALVE#2 LOAD.INJECT

Pump speed:
1.0 ml/Min
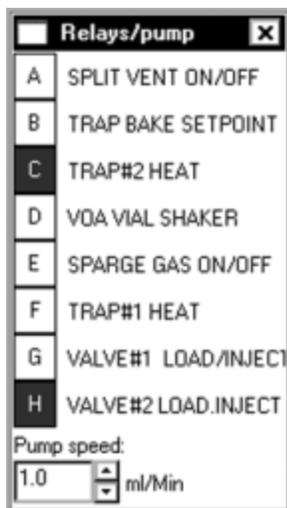
Users may manually control any relay event, either during the run or while in stand-by mode, by using the **Relays/pump** window. Click on View and choose **Relay/pump window**. In this window are eight buttons representing the relays with the appropriate letter. Activate a relay by clicking on its letter; it becomes highlighted to show its ON status. You can also toggle the relays from the keyboard by holding the control key (Ctrl) while pressing the letter of the relay: Ctrl+C, Ctrl+H, etc.
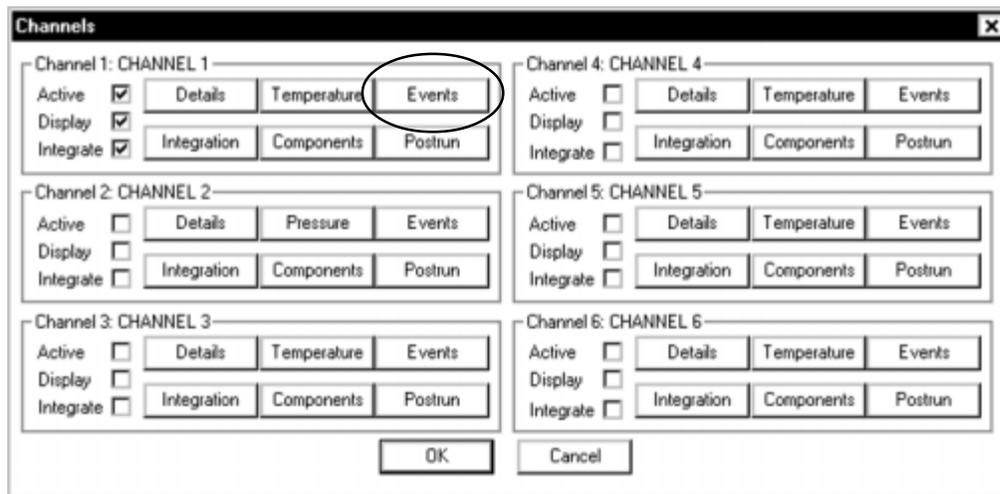
Event Tables

You can open the events table window from the Edit> Channels screen. Click on the Events button for channel 1. Or, right-click in the chromatogram window and select Events from the pop-up menu.
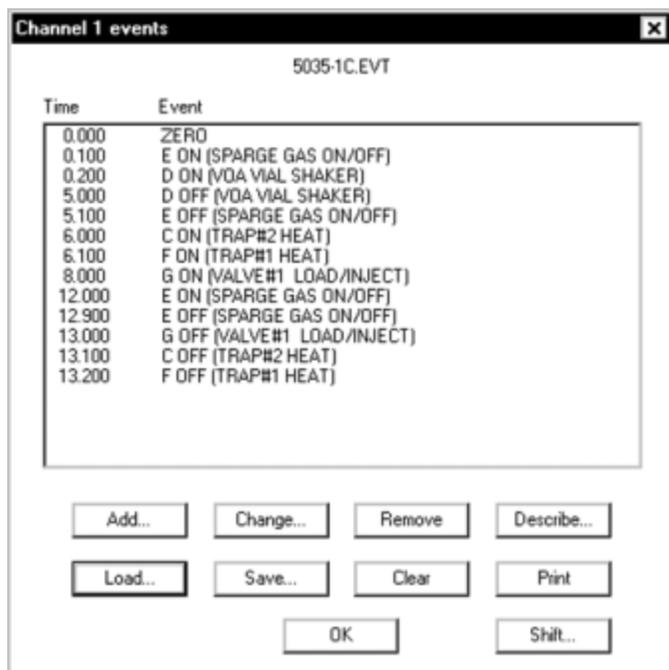
The event table window will open, either empty, or with whatever .EVT file was saved with the current control file (DEFAULT.CON, unless you have specifically opened another). At the bottom of the events table window there are several buttons for you to access event features.

Each channel has its own event table because of the signal processing type events that are available, such as Zero, Reverse, and Integration events. Hardware events may also be activated from any channel. SRI recommends entering hardware events only in the channel 1 event table to avoid confusion.

Click on the **Add...** button to add an event to the event table. The **Event details** screen will open, where you select the event and enter the time at which you want it to occur.

Click on an existing event in the event table to select and highlight it, then click on the **Change...** button to edit the selected event. You can also simply double-click an event to open the **Event details** screen, from which you can edit any selected event.

Click on the **Remove** button to delete a selected event from the events table.
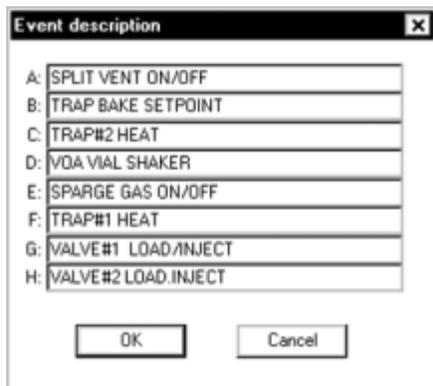

Type in your custom event descriptions.

Click on the **Describe...** button to customize any or all of your eight relay (hardware) event descriptions.

Click the **Load...** button to open an existing event table. PeakSimple will open the program directory and display all .EVT files.

Click **Save...** to save the current event table shown in the window.

Click **Clear** to remove any and all events and .EVT files from the event table window (but not from the hard drive). PeakSimple will prompt you for confirmation before proceeding to clear the event table.

Click the **Print** button to send the current event table to the printer through the Windows print manager.

Click the **Shift...** button to shift the sequence of events following the selected event forward or backward in time.

In this example, we are shifting the highlighted event forward 2 minutes.

Now the selected event takes place at 7.00 instead of 5.000; all subsequent events have also been shifted forward two minutes.

The **Shift...** button saves you having to re-type the entire event sequence.

Click the **OK** button to exit the events table window.

Channel 1 events

5035-1C.EVT

Time	Event
0.000	ZERO
0.100	E ON (SPARGE GAS ON/OFF)
0.200	D ON (VOA VIAL SHAKER)
5.000	D OFF (VOA VIAL SHAKER)
5.100	E OFF (SPARGE GAS ON/OFF)
6.000	C ON (TRAP#2 HEAT)
6.100	F ON (TRAP#1 HEAT)
8.000	G ON (VALVE#1 LOAD/INJECT)
12.000	E ON (SPARGE GAS ON/OFF)
12.900	E OFF (SPARGE GAS ON/OFF)
13.000	G OFF (VALVE#1 LOAD/INJECT)
13.100	C OFF (TRAP#2 HEAT)
13.200	F OFF (TRAP#1 HEAT)

Add... Change... Remove Describe...

Shift events

Shift this event and all subsequent events by: 2.000 minutes

OK   Cancel

Channel 1 events

5035-1C.EVT

Time	Event
0.000	ZERO
0.100	E ON (SPARGE GAS ON/OFF)
0.200	D ON (VOA VIAL SHAKER)
7.000	D OFF (VOA VIAL SHAKER)
7.100	E OFF (SPARGE GAS ON/OFF)
8.000	C ON (TRAP#2 HEAT)
8.100	F ON (TRAP#1 HEAT)
10.000	G ON (VALVE#1 LOAD/INJECT)
14.000	E ON (SPARGE GAS ON/OFF)
14.900	E OFF (SPARGE GAS ON/OFF)
15.000	G OFF (VALVE#1 LOAD/INJECT)
15.100	C OFF (TRAP#2 HEAT)
15.200	F OFF (TRAP#1 HEAT)

Add... Change... Remove Describe...

Load... Save... Clear Print

OK   Shift...

PEAKSIMPLE SOFTWARE
Events

The **Event details** screen opens when you click the **Add...** or **Change...** buttons, or when you double-click any single event in the list. In the **Event details** screen are listed all the events you can enter into an event table. Starting on the left, the eight relays are listed, followed by non-hardware events. Hold your mouse cursor over any event to read its ToolTips description.

There is a checkbox labeled "On" to the right of the hardware events list. When the event is turning ON a relay, make sure this box is checked. Uncheck the box when the event is turning OFF a relay. Even though they control the same relay, ON and OFF are separate and distinct events in the timetable. On the bottom left of the Event details window is the Event time field. Enter the time at which you want the event to occur here. Typically, PeakSimple has a lot of tasks to perform at the beginning of an analytical run. Therefore, SRI recommends that you enter the first hardware event no earlier than 0.100 minutes (6 seconds).

Hardware events are the first 8 listed in the Event details window...

...followed by non-hardware events.

Enter the time at which you want the selected event to occur.

Enter DOS path and filename here
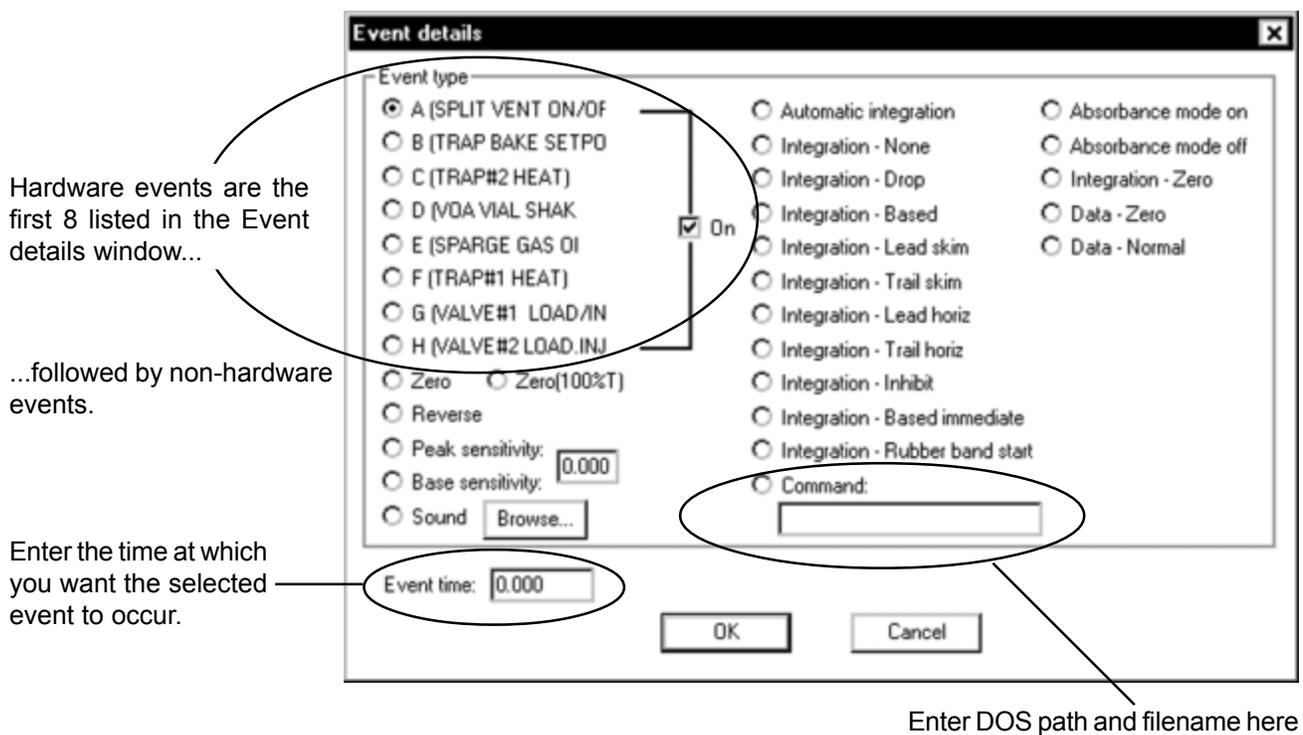
PeakSimple also permits you to automatically execute a DOS command during the analytical run using an event table. A DOS command is the same as running an executable file. You may use this function to launch a macro to copy, rename the preceding file so the next file may be updated into a spreadsheet, or to copy the chromatogram data and results file onto a floppy or hard disk drive other than the destination to which it was originally saved. A DOS command may be executed at any time during the analytical run by typing in the DOS path and the filename of an .EXE, .COM, or .BAT file, and the time the event is to occur. To add a DOS command event: click the radio button next to "Command," and type in your DOS path and executable filename. Example: C:\Excel\Macro1.bat Next, type in the time during the run at which you want the command to be activated in the form field labeled **Event time**. DOS events that require prolonged disk access should be executed after the run, using **Post-run actions** for channel 1.

You can choose to reset all eight relays at the end of the run by clicking Edit>Overall and checking the box in the lower left corner.

This option will return the relays to their default position—OFF.
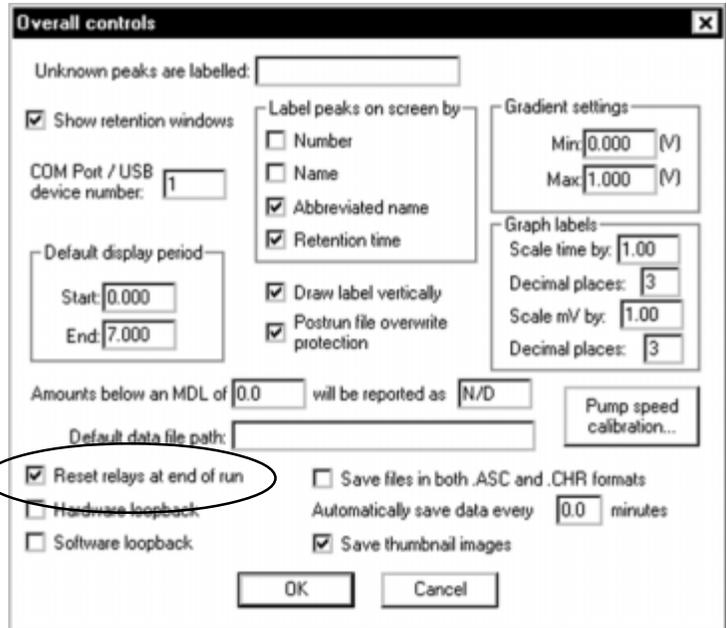
In some cases, a user may not want to reset the relays at the end of the run. For instance, when using our TO-14 Air Concentrator, users leave the gas sampling valve in the INJECT position at the run's end. This sweeps clean the trap and column, preparing the system for the next sample. In this case, the user would have an event table to turn OFF the valve relay and return it to the LOAD position sometime after the run has started. Therefore, such users would deselect the "Reset relays at end of run" option.