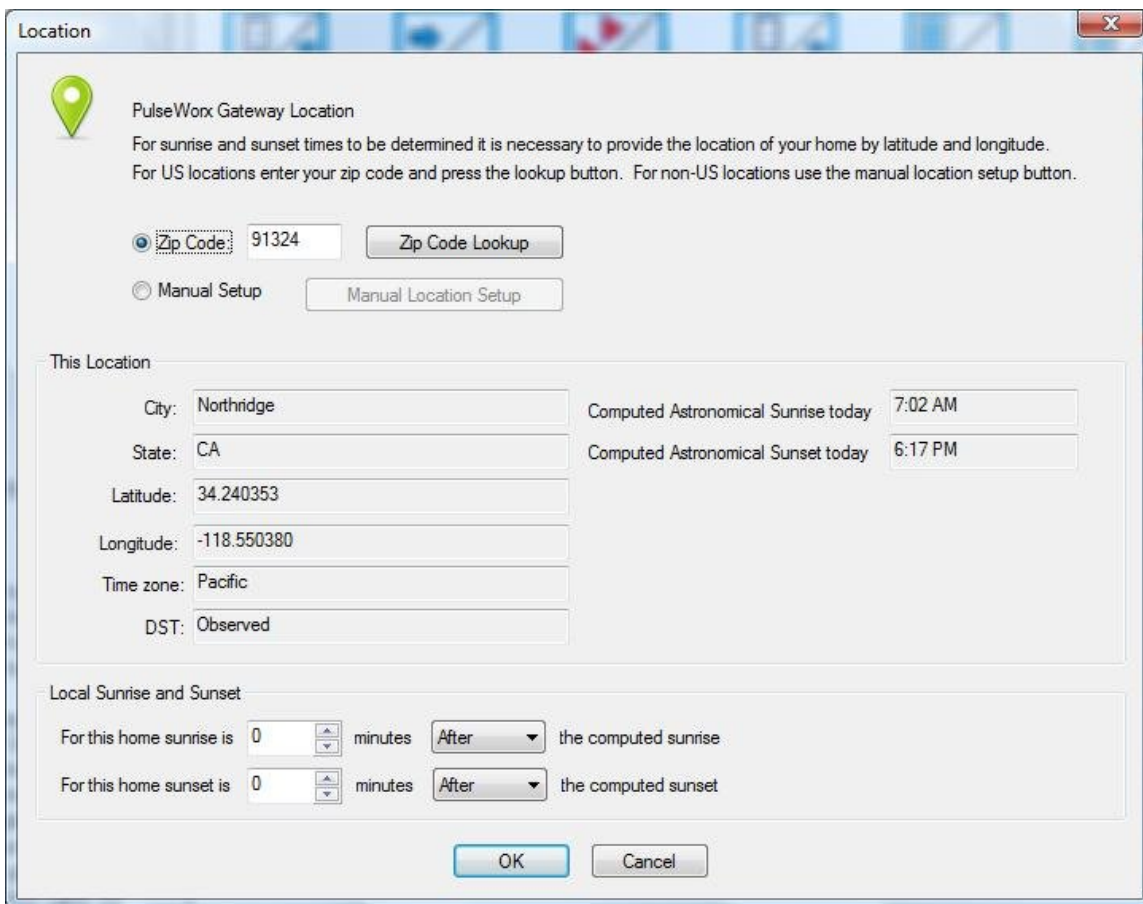


## PulseWorx Gateway

### Setting the location

One of the most important features of the PulseWorx Gateway is the on-board scheduler. Using the scheduler you can configure up to four lists of timed events that happen based on time of day or sunrise/sunset.

In order for the Gateway to correctly carry out these scheduled events that take place relative to sunrise or sunset, the Gateway needs to know your location. This is accomplished by selecting from the "PulseWorx Gateway" ribbon category the "Location" button in the "Gateway Tools" panel.



The screenshot shows a window titled "Location" with a close button (X) in the top right corner. Inside the window, there is a green location pin icon and the text "PulseWorx Gateway Location". Below this, a paragraph explains that for sunrise and sunset times to be determined, the location of the home must be provided by latitude and longitude. It also notes that for US locations, a zip code can be used for a lookup, while non-US locations require manual setup.

There are two radio buttons: "Zip Code" (selected) and "Manual Setup". The "Zip Code" option has a text box containing "91324" and a "Zip Code Lookup" button. The "Manual Setup" option has a "Manual Location Setup" button.

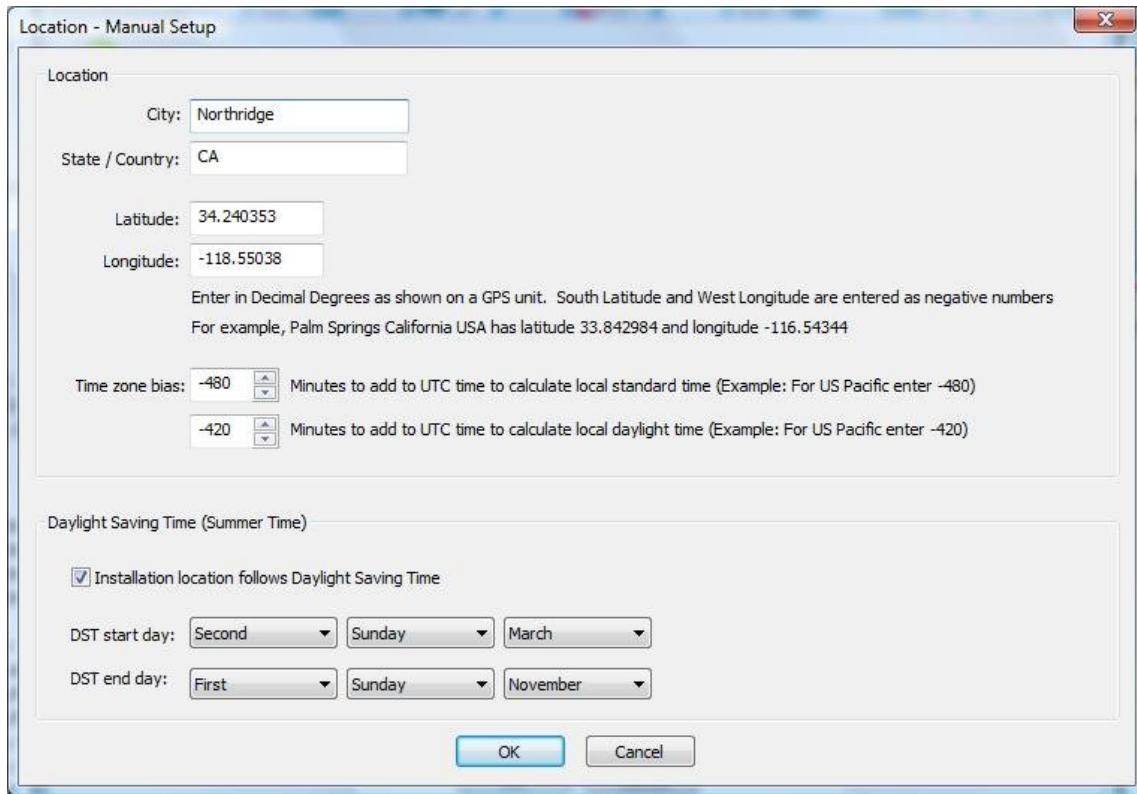
Below this, there is a section titled "This Location" with several input fields: "City" (Northridge), "State" (CA), "Latitude" (34.240353), "Longitude" (-118.550380), "Time zone" (Pacific), and "DST" (Observed). To the right of these fields, there are two text boxes: "Computed Astronomical Sunrise today" (7:02 AM) and "Computed Astronomical Sunset today" (6:17 PM).

At the bottom, there is a section titled "Local Sunrise and Sunset" with two rows of controls. The first row is "For this home sunrise is" followed by a spinner box set to "0", the word "minutes", a dropdown menu set to "After", and the text "the computed sunrise". The second row is "For this home sunset is" followed by a spinner box set to "0", the word "minutes", a dropdown menu set to "After", and the text "the computed sunset".

At the very bottom of the window are "OK" and "Cancel" buttons.

If the installation site is in the US then you can establish the location by a zip code lookup. This has the advantage of determining not only the location – latitude and longitude – but also the time zone and if the location observes daylight saving time (DST).

If you are outside of the US then you will need to configure the location manually.



As described in the dialog text, the installation location latitude and longitude are entered – this can come from a mapping program or a GPS device which you can configure to show values in decimal degrees. Also in this dialog are the time zone – represented by the number of minutes from Universal Time Coordinated (UTC) and the rules for when daylight saving time is started and ended. If you know the location in the older degrees, minutes, and seconds form, there are many web sites that can convert to decimal degrees – just search for them.

**Unless you correctly enter the location *and* the time zone, the Gateway calculations for sunrise and sunset will be incorrect.**

The final section of the location dialog allows you to "dial in" this calculation for your location. The sunrise and sunset calculations can't take into account if the house is on a hill – sunrise happens earlier and sunset later, or the house is in a valley – sunrise comes later and sunset earlier, or if the house is blocked by a building in the east – sunrise comes later but sunset is as calculated.

In each of these cases all you need do is use the location dialog to make the adjustments for your observed – or "local" – sunrise and sunset.



# App Note 114

For example, if the house is on a hill:

Local Sunrise and Sunset

For this home sunrise is 20 minutes Before the computed sunrise

For this home sunset is 20 minutes After the computed sunset

If the house is in a valley:

Local Sunrise and Sunset

For this home sunrise is 20 minutes After the computed sunrise

For this home sunset is 20 minutes Before the computed sunset

If the house is blocked by a building to the east:

Local Sunrise and Sunset

For this home sunrise is 15 minutes After the computed sunrise

For this home sunset is 0 minutes After the computed sunset

As a final note, when shipped from the factory the location is set for Northridge, California so the location should be one of the first things you adjust when installing a new Gateway.