The significant changes made to this version since the version originally posted on the *Silicon Chip* website (ver 1.2) are:

Bug fixes:
- Modified to allow the timezone to be set to -12 or +12 hours.
- Fixed the bug that affected startup between 9 and 12.
- Fixed a bug that caused the clock to run fast or slow if the crystal was very close to the correct frequency.
- Modified to remove the chance that an interrupt might change variables while the mainline code is using them.

New Features:
- The Setup button can be pressed (while the clock is running) to force an immediate synchronisation using the GPS. Note that the button needs to be held down for a couple of seconds.
- When the clock is running and it successfully synchronises via the GPS the startup LED will flash once. This is of dubious value as the clock will spend most of its time with the controller board hidden, but it may be useful if you used the Setup button to force a synchronisation and wanted to check the result.
- If the GPS module is completely dead, the microcontroller will retry 10 times with a delay of 4 hours before stopping at 11:50.
- If the GPS module cannot lock onto enough satellites it will retry 10 times with a delay of 4 hours before stopping at 11:55.
- The setup menu has an additional option to manually run the clock for a specified amount of time. This enables you to easily test different values for the clock pulse width and also step the second hand around to the 12 o'clock position.
- The firmware will automatically detect if the board has been modified (see November 2009 *Silicon Chip*) and will change how it works to suit the modifications.