Holdover Test

The following figures show the holdover results for two standard Trimble Thunderbolts. The upper figure is the digital to analogue voltage. This voltage steers the oscillator correcting for temperature and aging effects by using a Kalman Filter. The Kalman filter works by observing the behavior of an oscillator over temperature and time while GPS is locked. This is called the training period. Then when GPS is lost the Kalman filter steers the oscillator based on a prediction of oscillator behavior observed during this training period. The lower figure is time offset from GPS. The oscillators had been on for three days prior to beginning the test. A short training period of two hours was used. Measurements were taken every 10 seconds, thus 1000 = 10,000 seconds