Abstract :

A phasor measurement unit (PMU) is one of the most important measuring devices that can provide synchronized phasor measurements of voltages and currents in real time from widely spread locations in an electric grid. Indeed this device is crucial to the detection of disturbances and characterization of transient swings. In this work, a new PMU has been designed and implemented including the hardware architecture and the software program using a recent developed algorithm of phasor measurement and frequency estimation. The developed PMU is based on computer associated with an acquisition card AD512 using Matlab as software tool for developing its running program as well as its graphical user interface. Finally, this PMU has been tested in laboratory using network simulator that gives good measurements with an acceptable errors even at off-frequency.