



Design and Implementation of Low Cost Smart Web Sensors for Electric Power Quality Monitoring

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Abstract: The paper presents a low cost virtual instrument for monitoring the power quality events. The problem of power quality concerns the interferences which can be present in the mains. These electromagnetic disturbances can over a large interval of frequencies and can be present in industrial, domestic as well as commercial system. As main negative effects we can mention the high order harmonics, voltage fluctuations, flickers and disturbances with high slew-rates. It is frequently indispensable to measure power quality indexes in wide electric power plant or in industrial zones. To this aim a low cost smart web sensors has been designed and implemented to acquire, process and transmit data over 802.3 network. It is organized in multi micro controller system. The first one dedicated to the data acquisition and the other to data processing, dynamic HTML pages construction and TCP/IP stack management. Key features of realized devices are low cost, data processing and remote communication capabilities, the possibility to provide data with any internet browser.

Keywords: Power quality, power system transient, distortion, voltage measurement, signal analysis, smart web sensors

