

Development of Secure NTP Server module for Time Synchronization of C&I Systems

A secure NTP Time server module has been designed and developed indigenously for time synchronization in C&I applications. It is a statum-1 time server which uses GPS time as primary source and provides accurate time synchronisation among various C&I systems and plant servers. Time synchronisation helps in proper chronological logging of event messages for post-event analysis. In addition to network based time synchronization, the module also provides relay contact output to cater to different safety classes of C&I systems. The device can handle more than 30,000 NTP requests/sec with maximum holdover time of 10 μ sec/day in case of GPS signal loss. The NTP server module provides security features like encrypted FPGA configuration, OS less stack operation in FPGA, whitelisted clients with specified rate limiting, node authentication and CHAP based Secure Configuration management.

