Abstract

The embedded systems have been used in various aspects of life, especially in the field of control and automation. Embedded systems are usually used as a core component of a product to perform computing tasks in real time. RTOS (Real Time Operating System) is a result of the development in the field of IT as an operating system intended for real time operation. The purpose of this experiment is to introduce the working principle of RTOS planted on ARM microcontroller of CORTEX-4 type STM32F4 Discovery. In this study the open source RTOS CHIBI was usesd as real time operating system and ARM as a microcontroller. Experimental method was used in the form of planting the CHIBI RTOS on ARM Microcontroller equipped with serial communication, LCD, LED and Push Button in running DC motors as a catalyst in view Preemptive Kernel, semaphores and Clock Tick on Kernel. The result shows that the CHIBI RTOS can be embedded in the microcontroller types of ARM Cortex-M4. Tests on Preemptive Kernel, Semaphores and Clock Tick on Kernel perform well. In the future, more will precise testings for more complex and various scenarios will be needed.

Keywords : *RTOS, task, scheduling, kernel, semaphore, clock tick, microcontroller ARM*