Abstract

An embedded system is a special-purpose computer system designed to perform one or a few dedicated functions often with real time computing constraints. It is usually embedded as part of a complete device including hardware and mechanical parts. In contrast, a general-purpose computer, such as a personal computer, can do many different tasks depending on programming. Embedded systems control many of the common devices in use today.
Since the embedded system is dedicated to specific tasks, design engineers can optimize it, reducing the size and cost of the product, or increasing the reliability and performance. Complexity varies from low, with a single microcontroller chip, to very high with multiple units, peripherals and networks mounted inside a large chassis or enclosure.

In general, "embedded system" is not an exactly defined term, as many systems have some element of programmability. For example, Handheld computers share some elements with embedded systems - such as the operating systems and microprocessors which power them - but are not truly embedded systems, because they allow different applications to be loaded and peripherals to be connected.

In this presentation we are going to concentrate on embedded systems, real-time operating systems, its classification, comparison with OS configuration and design process.

**Reference**

[1] Energy Resources Center @ UIC www.erc.uic.edu - can provide expertise in industrial steam systems, also will perform energy assessments for industrial clients.
[2] Industrial Assessment Centers http://www.oit.doe.gov/iac/ - will provide energy assessments (including steam systems) free of charge to qualified industrial clients.

**Index Terms**

Electronics  
Embedded Systems

**Key words**

 Embedded system

Reliability
Microcontroller chip