

The eCos[®] 2.0 RTOS for Diamond[™] DC232L processor

The Diamond Standard Series processor family from Tensilica is based on the Xtensa[®] LX2 architecture. It is a highly efficient configurable, and extensible processor architecture making it ideal for System-on-Chip (SOC) designs.

The eCos[®] 2.0 kernel port from Aftek enables device manufacturers to develop, run, and deploy devices to market easier, faster, and more cost effectively than ever before. Clients can use the tested BSP to make optimal usage of the processor and OS capabilities. It can be done with the help of abstraction provided by the Board support package (BSP), thereby leading to faster and cheaper application development.

Situation

Because of its rich feature set, low power requirements, and configurability, Diamond core processors are fast gaining popularity in a variety of fields like control and automation, mobile entertainment, home entertainment, networking, storage, and more.

To blend the benefits of real time operating system with feature rich Xtensa[®] LX2 architecture, Aftek decided to port eCos 2.0 for Xtensa[®] LX2 architecture and develop the board support package for the platform based on DC232L processor.

Expected Feature Set

- Low footprint of the OS
- Real time operating system to facilitate real time applications
- Multiple peripheral support

Solution

Aftek selected the evaluation board for DC232L (XTAV60) and ported eCos 2.0 onto it. Aftek executed the test cases available in eCos source package to prove the reliability of the eCos port.

Aftek's BSP for Diamond DC232L includes the following modules:

- RedBoot[™] with OS download capability
- HAL port
- **Peripheral drivers:**
 - Display
 - Ethernet
 - NOR flash

Benefits to the Client

- Ready to use full functional and tested BSP
- Reduced time to market
- Efficient client support

Applications

The DC232L processor can be used in applications with medium to high performance requirements. It contains a full-featured Memory Management Unit (MMU) that can support most operating systems used in embedded applications. Used with the eCos real time operating system, the DC232L can provide high performance benefits in terms of cost, power, and code efficiency for most embedded applications.

The DC232L can be effectively used in hand-held devices such as PDA and digital still cameras, personal security devices, wired and wireless routers, and bridges; and also in communication devices such as Bluetooth modems and WiFi access points.

Technology

- eCos 2.0
- Xtensa[®] LX2 architecture

