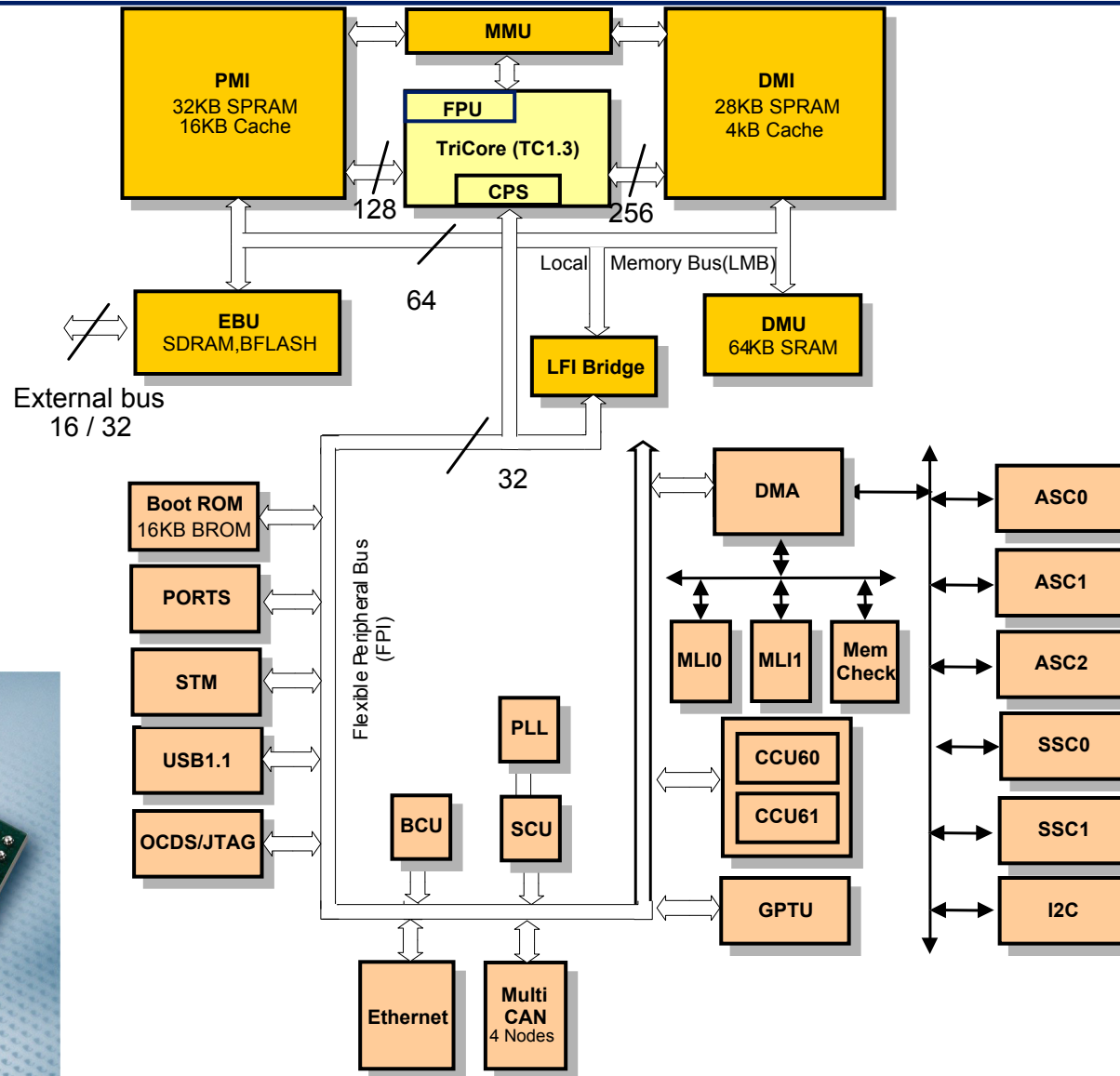


Cedar TC1130 Blockdiagram



stop thinking



Linux for TriCore **TC1130** **TC1920**

At last TriCore software developers can fully take advantage of numerous tested and ready-to-use Linux applications and software modules. The availability of Linux for TriCore gives a new meaning to how the development of embedded software can look like.

Among all other operating systems, Linux clearly stands out with its features: carrier-grade stability, process isolation, numerous third-party applications, and availability of the source code. And Linux for TriCore inherits them all.

TriCore is an advanced 32-bit embedded processor that unifies features of three distinct processor types: RISC, CISC, and DSP. Its architecture is blended by a rich set of peripherals, an advanced on-chip debugger, and in some TriCore implementations by a programmable Peripheral Communication Processor (PCP). TriCore's advanced features like fast context switching, memory protection mechanisms, and the availability of a memory management unit allowed us not only to port Linux without introducing any proprietary changes in the operating system's structure, but also to accomplish it efficiently.



All the features that constitute TriCore's advanced architecture require from programmers a significant learning effort. Linux helps to cut this learning curve by offering hardware-independent standard interfaces. This allows programmers to focus on their applications, and not on nuts and bolts of a target CPU architecture.

With Linux for TriCore as the operating system, applications gain a high reusability potential. Because Linux for TriCore is fully compatible with a standard Linux distribution, the programmers can leverage the investment in their application software: the code is easily portable not only between current and future TriCore versions, but also between different processor architectures. In this way, the actual code development can start on any available CPU platform - in many cases long before the target development board becomes available.

We offer Linux for TriCore in several distribution packages. Those packages address different needs of the developers by offering a wide range of content and maintenance levels. Adescom offers also a comprehensive training for Linux for TriCore, as well as customized services.

Product Packages

Linux for TriCore comes in four packages that address a wide range of needs: starting from the beginners up to advanced software developers:

- ▶ Basic Package
- ▶ Linux Starter Kit
- ▶ Developer Set Package
- ▶ Extension Packages.

The Basic Package is offered from our web site free of charge and comes with no support. The Starter Kit is a superset of the Basic Package and contains

additionally GNU compiler, Linux real-time extension RTAI, and TriCore evaluation hardware. The kit comes also with no support and can be ordered either at Adescom directly or through our distributors. The Developer Set Package and Extension Packages provide maintenance and are offered to our customers with valid subscription agreements. The subscription agreements can be ordered either at Adescom directly or through our distributors. ☐

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Basic Package

The Basic Package for TriCore contains:

- ▶ TC1130 or TC1920 port of the Linux kernel, compliant to 2.4.19 Linux release
- ▶ BusyBox: ar, ash, basename, busybox, cat, chgrp, chmod, chown, chroot, clear, cmp, cp, cut, date, dc, dd, df, dirname, dmesg, dos2unix, du, dumpkmap, dumptmp, echo, env, false, fbset, fdflush, find, free, freeramdisk, fsck.minix, getopt, grep, gunzip, gzip, halt, head, hostid, hostname, hush, id, ifconfig, init, kill, killall, klogd, lash, length, linuxrc, ln, logger, logname, ls, lsmod, makedevs, md5sum, mkdir,

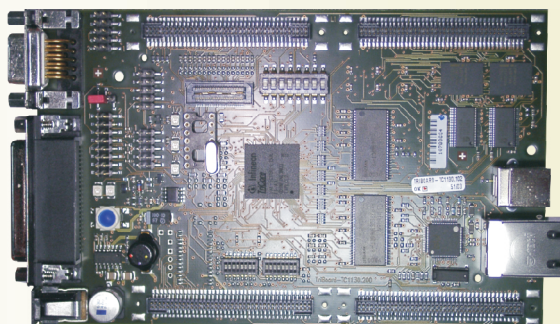
mkfifo, mkfs.minix, mknod, mkswap, mktemp, modprobe, more, mount, msh, mt, mv, nc, nslookup, pidof, ping, pivot_root, poweroff, printf, ps, pwd, rdate, readlink, reboot, renice, reset, rm, rmdir, route, sed, sh, sleep, sort, stty, sync, syslogd, tail, tar, tee, telnet, test, tftp, touch, tr, traceroute, true, tty, umount, uname, uniq, unix2dos, update, uptime, usleep, uudecode, uuencode, vi, watchdog, wc, wget, which, whoami, xargs, yes, zcat

- ▶ RAM disk device driver
- ▶ Device drivers: UART, Ethernet, USB.

Starter Kit

Linux Starter Kit is an easy way to make the first steps in Linux. The kits contains the Basic Package distribution, GNU compiler distribution, kGDB kernel debugger stub, real-time extension RTAI, bootloader, and TriCore evaluation board. The board comes with Linux pre-installed, ready to run.

This allows users to develop their own applications, and with a little overhead to dynamically link those applications to Linux. More advanced applications may require Disk-on-Chip features which are offered in the hardware of the Developer Set Package (see below).



Developer Set Package

The Developer Set Package addresses the needs of software developers that require a full set of hardware options and design environment tools. The design environment comprises the following modules:

- ▶ Basic Package
- ▶ GNU compiler, glibc and pthread libraries
- ▶ Bash shell; basic Unix utilities: cat, chmod, shown, cp, dd, dmesg, echo, false, free, halt, id, kill, ln, ls, mkdir, mv, ps, pwd, reboot, rm, rmdir, shm sync, tee, true, uptime, yes

- ▶ Network utilities: ping, ifconfig, netstat, arp, route
- ▶ Kernel and user-space debuggers with GUI
- ▶ Eclipse integrated design environment.

The Developer Ser Package comes with an extended TriCore evaluation board that combines TriCore Starter Kit with a Disk-on-Chip extension. The Disk-on-Chip provides ample space of non-volatile storage which can be used for a root file system and user applications. This leaves more operating memory space for run-time needs.

Extension Packages

Extension Packages offer additional modules that can be used on the top of the Developer Set Package.

For TriCore we offer the following Extension Packages:

- ▶ Real-time extension RTAI
- ▶ Kaffe: Java virtual machine. ☐

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