



THE DATASHEET OF P1022PSE2HFA



P1022DS

Integrated media and communications processor development system

Overview

The P1022/P1013 development system (P1022DS) is ideal for hardware and software development for embedded applications. It leverages the highly integrated QorIQ P1022 processor, a Freescale Energy-Efficient product solution, and leading-edge external components.

The high level of integration in the P1022 processor helps to lower system costs, improve performance and simplify board design. The P1022 processor supports:

Dual e500 Cores Built on Power Architecture® Technology

- 800–1067 MHz
- 256 KB frontside L2 cache with ECC, hardware cache coherent
- 36-bit physical addressing, DP-FPU

System Unit

- 64-/32-bit DDR2/DDR3 with ECC
- Integrated SEC 3.3 security engine
- Open-PIC interrupt controller, performance monitor, 2 x I²C, timers, 16 GPIOs, DUART
- 16-bit enhanced local bus supports booting from NAND flash memory
- Up to two USB 2.0 host controller with ULPI interface
- SPI controller supports booting from SPI serial flash memory
- SD/MMC card controller supports booting from flash cards
- Up to two 10/100/1000 Ethernet controllers (eTSEC) with Jumbo Frame support, SGMII interface
- Enhanced features: Parser/filer, QOS, IP-checksum offload, lossless flow control
- IEEE® 1588 v2 support
- Three PCI Express® 1.0a controllers
- Two SATA controllers
- I²S/TDM interface
- LCD interface
- Packet lossless deep sleep

The P1013 is a single-core version of the P1022. The P1022 processor also integrates an optional hardware encryption block that supports different algorithms for high-performance data that is critical for supporting secure communications. Devices marked with an E include a security engine. The P1022 also includes integrated dual SATA controllers, LCD interface and I²S/TDM audio interface, as well as advanced power management capabilities for Energy Star guidelines with less than 300 mW deep sleep power dissipation.

A board support package (BSP) is pre-installed on the P1022DS. This BSP consists of a boot loader (u-boot) and a generic Power Architecture technology system based on the Linux® kernel. The u-boot binary and the Linux kernel reside in the on-board flash memory with a file system pre-installed on the hard disk shipped in the P1022DS development system.



The P1022DS BSP generation takes advantage of the Linux Target Image Builder (LTIB), a suite of tools that leverages existing open source configuration scripts and source code packages, combining them all into a single BSP generation bundle. The source code packages include boot loader and Linux kernel sources as well as many user-space source code packages to build a complete BSP. The LTIB also provides compiler packages, required to build the BSP. Freescale developers use the LTIB to create BSPs for a multitude of Freescale development markets. The LTIB leverages as many BSP elements as possible for the Freescale markets supported, while offering the flexibility necessary to customize components that require platform-specific modifications.



Many third-party applications are available for the P1022DS. They are typically built on top of the BSP delivered by Freescale and can be installed on the hard disk. To see demonstrations or to acquire details of Freescale's third-party applications for this platform, please contact your local Freescale sales office.

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