Overview

The P1010RDB is a highly integrated reference design board that can help shorten your time to market. The reference design is aimed at low-cost networking applications (with or without trust architecture), wired and wireless access, as well as industrial and smart energy applications.

This cost-effective board is based on the QorIQ P1010 processor family and contains leading-edge external components to help you quickly design and implement your target application. The P1010RDB leverages the P1010 processor and supports both the full-featured P1010 as well as the more cost-efficient P1014 device.

P1010RDB System Block Diagram
The P1010 processor family is based on the e500 core, built on Power Architecture® technology, which has a core frequency range of 533–1000 MHz, and supports a 32 KB instruction and L1 data cache and a 256 KB L2 cache. The P1010 also supports a complete trust architecture environment, CAN controllers for industrial applications, three Gigabit Ethernet controllers with IEEE® 1588 V2 support, USB 2.0 plus PHY, two PCI Express® 1.0a controllers, up to six SerDes interfaces, 16/32-bit DDR3 and DDR3L (16-bit mode supports ECC), SPI controller supporting booting from SPI, serial flash memory, SD/MMC card controller supporting booting from flash cards and an integrated security engine. The new P1010 family with built-in 45 nm process technology provides high integration for cost-efficient solutions and enables a trust platform (through trust architecture) for customers that want to preserve the hardware or software integrity of their platforms.

The P1010RDB platform features 1 GB of DDR3 SDRAM, 32 MB NOR flash memory, 32 MB SLC NAND flash memory, 256 KB i2C EEPROM, 128 MB SPI flash, SD/MMC connector to interface with the SD memory card. Along with the hardware support, the P1010RDB comes with a board support package (BSP) that includes both the U-boot and Linux® 2.6 operating system support. The platform is also available with third-party software applications. For a demonstration or for details of Freescale third-party applications for this platform, please contact your local Freescale sales office.

**P1010RDB Board Features**

**Memory**
- 1 GB DDR3 (8-bit x 4 chips), supports up to 8 GB on-board DDR3 SDRAM
- 32 MB (16-bit) NOR flash memory
- 32 MB SLC NAND flash memory
- 256 KB i2C EEPROM
- 128 MB SPI flash
- SD/MMC connector to interface with the SD memory card

**PCI Express**
- One standard PCI Express connector
- One mini PCI Express connector

**SATA**
- One internal SATA connected to 2.5” 160 G SATA 2 HDD
- One eSATA connector to rear panel

**USB 2.0**
- One USB 2.0 port connected via UTMI PHY to mini AB interface
- One USB 2.0 port directly connected to mini AB interface

**Three 10/100/1000 Ports**
- eTSEC 1 connected to RGMII PHY
- eTSEC 2 and 3 connected to SGMII PHY

**Flex CAN**
- Two connectors for field bus interface

**UART**
- DUART interface, terminated as RJ45 connectors

**TDM**
- Two FXS ports connected via an external SLIC to the TDM interface
- One FXO port connected via a relay to FXS for switchover to POTS

**Others**
- LEDs: Power (green), link (green), activities (yellow)
- JTAG for debugging
- IEEE 1588 V2 signals for test and measurement

**Form Factor**
- Mini ITX form factor

For more information, please visit freescale.com/QorIQ

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