

Programmable Connectivity Solution Platforms



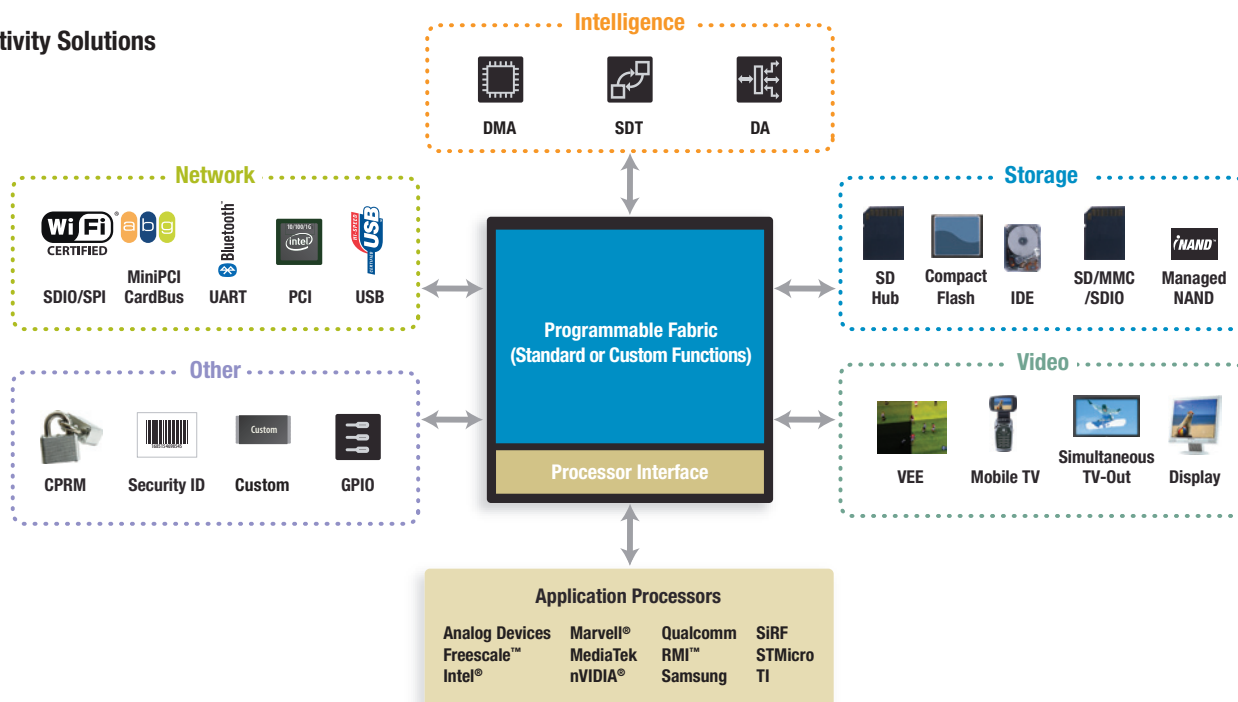
QuickLogic® Corporation's PolarPro solution platforms provide a fully programmable and flexible solution for the mobile handheld market with:

- Complete, customizable solutions that provide fast time-to-market using QuickLogic's library of mix and match Proven System Blocks (PSBs) for all handheld mobile device connectivity needs
- On-chip SRAM, FIFO and DMA controllers to enable data buffering and autonomous data transfers that reduce application processor overhead
- Very Low Power (VLP) mode that puts the entire device in sleep mode, drawing as low as 2.2 μ A, while maintaining I/O status and internal register values

Key Features

The award winning PolarPro® families of programmable platforms, including PolarPro and PolarPro II, were purposely architected to meet the interconnect and system logic requirements of power sensitive and portable applications. QuickLogic's PolarPro Customer Specific Standard Products (CSSPs) work seamlessly with any processor available in the market today and the programmable fabric allows designers to address any emerging connectivity requirement. These most versatile devices enable connectivity solutions for storage, wired/wireless communication, video and imaging, security and other custom functions, while providing high performance. QuickLogic combines these PSBs and software drivers, along with customer-specific logic, to deliver CSSPs based on the exact requirements of mobile device ODMs and OEMs.

PolarPro Connectivity Solutions





Solution Platform Highlights



The PolarPro CSSPs offer a spectrum of platforms with varying amounts of programmable fabric, embedded arrays of on-chip dual-port SRAM with co-located asynchronous FIFO controllers, programmable I/Os, advanced clock management, VLP, and DDR interfaces for highly cost-effective memory expansion. PolarPro solution platforms provide a compact, single-chip solution that:

- Reduces Bill Of Materials (BOM) costs
- Saves board space
- Eases system-level design trade-offs
- Improves the end product's time-to-market and time-in-market



The design of the PolarPro II solution platform builds on the award-winning PolarPro platform, offering a more compact architecture that allows for higher levels of integration in a single device. Additionally, PolarPro II enables higher design flexibility and is the ideal silicon platform for delivering customer or market-specific combinations of QuickLogic's PSBs for storage, wired/wireless communication, video/imaging, security and other custom functions. The device also offers a more advanced power management scheme where core voltage can scale as low as 1.5 V to reduce dynamic power consumption.

PolarPro Family Features and Benefits

- **Enhanced Fabric Architecture** – Extremely dense, ultra-low power programmable logic with a range of capacity based on QuickLogic's patented ViaLink® technology, which provides for quick customization of all CSSP platforms.
- **VLP Mode** – VLP capability provides an instant ability to save battery power when the device function is not needed. The VLP mode freezes device operation, during which the static current can drop to as low as 2.2 μ A, while I/O states and internal register values are retained. Additionally, the PolarPro II solution platform provides for rapid entry and exit from VLP mode, as fast as 10 micro-seconds. This allows system developers to conserve energy through more effective system power management by shutting down the device in between bursts of activity.
- **Configurable Clock Manager (CCM)** – The CCM can be used to eliminate internal device routes and external PCB trace delays, thus providing the ability to synchronize internal clocks to external clocks within a system. A programmable delay line enables programmable clock delays of up to 2.5 ns in programmable steps of 250 ps. The embedded CCMs simplify the clock resources on the PCB board and therefore reduce BOM costs and board space.
- **Native Support for DDR SDRAM** – Native built-in DDR I/Os enable the system design to leverage the lowest cost and lowest power mobile DDR and DDR1 SDRAM memory.
- **Embedded SRAM Blocks** – Dedicated blocks of true, dual-port capability SRAM with configurable aspect ratios to simplify FIFO design and implementation. The PolarPro II solution platform allows for greater embedded SRAM configurability.

- **Programmable I/Os** – General purpose programmable I/Os with fully registered input/outputs. Each I/O has programmable slew rate control, programmable pull-up/pull-down and weak keeper functionality. Available as 1.5/1.8/2.5/3.3 V drive capable I/Os that offer highly optimized structures for mobile applications.

- **Small Form Factor Packaging** – Ideal for space constrained applications, these devices are available in small form factor packaging technology as small as 5x5 mm (TFBGA), as well as in Wafer Level Chip Scale Package (WLCSP) and known good die configuration. Also available Pb-Free, these compact packaging options provide reduced board space and cost.

With its ultra-low power technology, wide range of I/O interfaces, coupled with a diverse library of proven system blocks for its configurable fabric, the PolarPro solution platforms from QuickLogic address the critical connectivity, control and intelligence needs for mobile device design.

Applications Overview

All PolarPro solution platform families can be configured to support a varied array of functionality with PSBs that allow for unique custom designs or product variations in all of these market segments:

- Smartphones, multimedia and feature phones
- Personal Media Players (PMPs)
- Portable Navigation Devices (PNDs)
- Wireless data card
- Wireless HDD
- Other portable consumer electronics

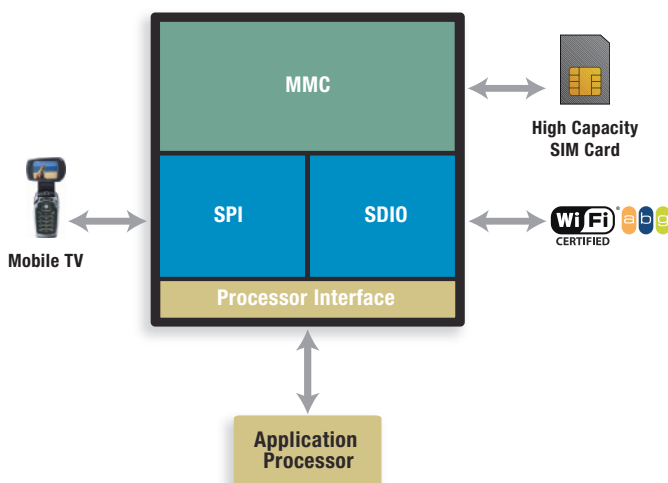
Application Examples

Smartphone:

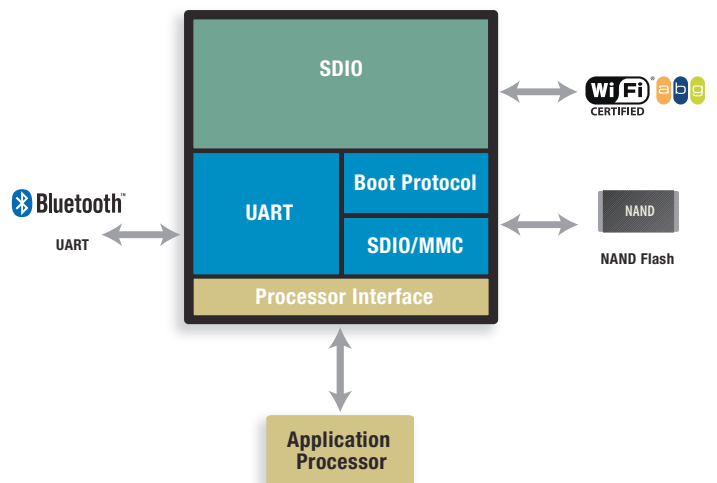
- SDIO-based Wi-Fi for voice-over-IP and data download
- High-speed MMC interface to high-capacity SIM cards for conditional access and data storage
- SPI interface to connect to mobile digital TV chip sets such as DVB-H
- Programmable host interface provides glueless interface to mobile application processor

Portable Navigation Device/Personal Media Player:

- SDIO-based Wi-Fi for voice-over-IP and data download
- Second SDIO port for connecting to managed NAND with boot capability
- High-speed UART supports Bluetooth 2 with 3 Mbps transmission rate
- Programmable host interface provides glueless interface to mobile application processor



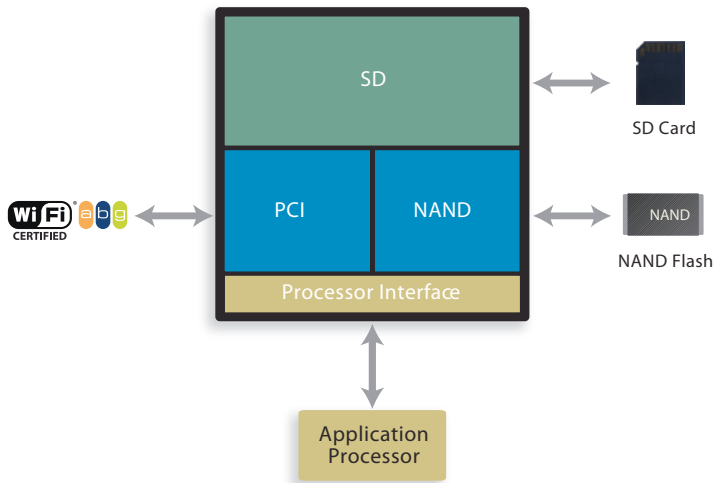
Smartphone Example



PND/PMP Example

Portable Industrial:

- PCI-based Wi-Fi provides high-throughput wireless connection to synchronize with servers
- NAND flash controller enables cost-effective NAND flash storage for data and programs
- High-speed SD controller supports SD cards with SDHC as a secondary storage option
- Programmable host interface provides glueless interface to mobile application processor



Portable Industrial Example

About QuickLogic

QuickLogic Corporation (NASDAQ: QUIK) is the inventor and pioneer of innovative, customizable semiconductor solutions for mobile and portable electronics OEMs and ODMs. These silicon plus software solutions are called Customer Specific Standard Products (CSSPs). CSSPs enable our customers to bring their products to market more quickly and remain in the market longer, with the low power, cost and size demanded by the mobile and portable electronics market. For more information about QuickLogic and CSSPs, visit www.quicklogic.com.



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