The Smart Solution for Smart Handheld Phones

The System Design Challenge

- Smart Handheld Phone designers have always faced short design cycles

- Programmable logic devices are needed to quickly fix ASIC and ASSP bugs

- Peripheral bridges are needed to connect to the latest interface standards

The Xilinx Smart Handheld Phone Solutions

- Xilinx® low power CPLDs offer a system solution that fills the gaps left by standard off-the-shelf handset processors

- CoolRunner™-II CPLDs offer free reference designs for quick implementation

- CoolRunner-II CPLDs offer low cost, low power, and small form factors

Xilinx low power CPLDs offer you production ready, programmable devices that fill the gaps left by processor solutions for the smart handset marketplace. CoolRunner-II CPLDs enable you to:

Deliver Features in Real Time

The Xilinx Smart Handheld Phone Solution offers you ready-to-use designs where things happen in real-time under real world conditions. New features can be implemented and designed before other semiconductor manufacturers even have a production device ready to ship.
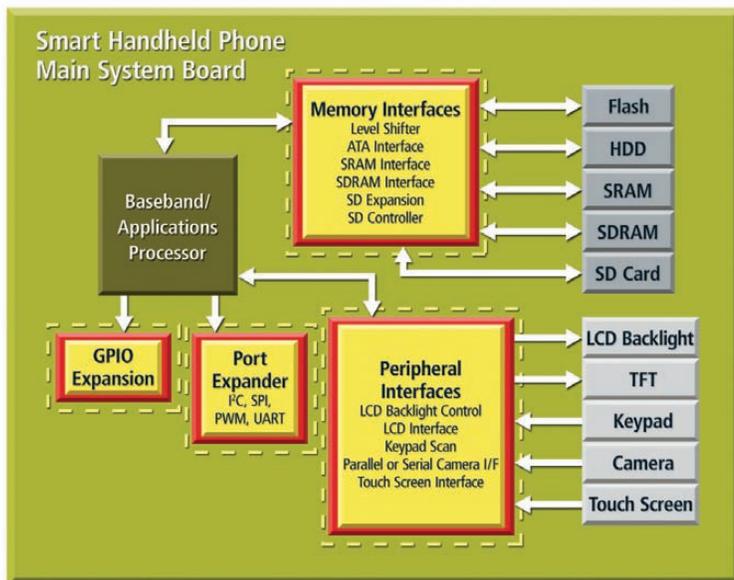
Select From a Full Line of CPLD Densities

The CoolRunner-II family of CPLDs allows you to select densities ranging from 32 to 512 macrocells. Packages range from very small QFN, ideal for low-cost, small form factor applications, to high pin-count, chip-scale packages that are still small enough for handset applications.

Test Your Solution

Xilinx provides low cost CPLD Starter Kits that are easy to use and come with everything you need to design, test, and program your device. Design kits are available from Xilinx and other 3rd party providers. Xilinx also has a handset demonstration platform that shows how easy it is to integrate multiple functions into a single CPLD.

Utilize Advanced Features & Design With Easy-To-Use ISE™ Software

Additional features on the 128 macrocell and higher densities allow for lower power consumption, clock speed manipulation and a variety of voltage and I/O standard conversions. Xilinx also provides an easy-to-use design software package that lets you design, test, and program any Xilinx CPLD. Plus, it's absolutely free.

XILINX®

Smart Handheld Phone Main System Board

Functionality supported by Xilinx

Enhance your Smart Handheld Phones with Xilinx CoolRunner-II CPLD

CoolRunner-II CPLDs offer four main functions in Smart Handheld Phones:

Interface Bridging

CoolRunner-II CPLDs are ideal for handheld peripheral interface bridging designs. Interface bridges such as I^{2}C to SPI, SRAM, FLASH, and SDRAM interfaces can be cost effective when implemented in a low power CoolRunner-II CPLD.

Interface Controller

CoolRunner-II CPLDs offer the industry's most popular interface controller IPs for handhelds, including the IDE controller for mini-HDD, the SD controller for SD memory and SDIO based peripherals, the display controller for TFT/LCD, and touch screen keypad scanning control logic significantly saving development time and cost.

Peripheral or GPIO Expansion

Often application processors for handhelds run out of peripheral or GPIO needing an external device for additional peripheral and/or GPIO expansion. CoolRunner-II CPLDs offer a cost effective way to implement additional peripherals such as I^{2}C, SPI, timer/counter, and UART, as well as offering GPIO expansion with level translation capability in the easiest and most efficient way.

Power Optimization

Besides CoolRunner-II CPLDs' nature of being low power, designers can further take advantage of built-in power saving mode called DataGATE. DataGATE can be used not only to gate inputs and clocks going into CoolRunner-II devices; it can also be used to gate external components to further save system power.

Take the Next Step

For more information on Xilinx Smart Handheld Phone Solutions, visit our website *www.xilinx.com/esp/consumer.htm#handset* or call your local sales office or distributor. To learn more about CoolRunner-II CPLDs, visit *www.xilinx.com/cr2*. Download your ISE WebPACK™ design tools today from *www.xilinx.com/ise/logic_design_prod/webpack.htm* and begin designing immediately.

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