

Xilinx Automotive In-Vehicle Infotainment Companion Chip Solution



Industry Challenges

- Accelerate development time
- Provide a standards-based scalable platform that bridges the gap from generation-to-generation
- Integrate automotive specific functions for standard products

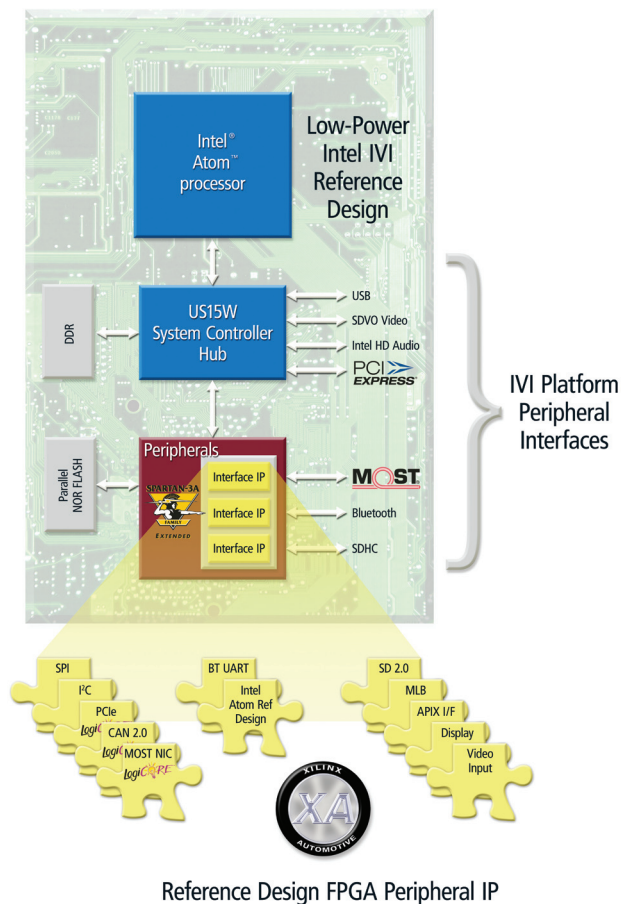
Xilinx Solutions

- Provides a flexible PCIe®-based solution targeted towards platforms based on the Intel Atom processor
- Infrastructure of solution developed on standard tools to enable user to build upon it
- Scalable FPGA device density to suit specific application needs

Xilinx Automotive adds flexible connectivity to the Low-Power Intel® In-Vehicle Infotainment (IVI) Reference Design targeted at high-end automotive head units. The collaborative effort with Intel resulted in a design that couples the inherent flexibility and built-in connectivity capabilities of the XA Spartan®-3E FPGA with the high performance, low power processing and surrounding ecosystem of the Intel® Atom™ processor Z530 and Intel® System Controller Hub US15W.

Why use the Xilinx Companion Chip for Infotainment Solutions?

Xilinx delivers levels of performance, scalability, and flexibility not previously available on an open infotainment platform (OIP) while accelerating system development. The combination of the Xilinx FPGA and Intel® processor addresses the growing demand for digital information and entertainment in-vehicle on par with what consumers have come to expect in the home or office, while maintaining the high quality and reliability standards of the automotive industry.



Reference Design FPGA Peripheral IP

Figure 1

The low-power Intel IVI reference design utilizes XA Spartan-3E FPGAs to extend the platform's flexibility and integrate many automotive-specific functions, including early access to video and MOST® network connectivity.

Customize Your Infotainment Application with Automotive Solutions

Using the FPGA, designers can build upon the OIP by producing a customized companion chip for peripheral extension to the Intel System Controller Hub US15W.

Available to select customers, adaptation guides allow the user to add or remove peripherals in the FPGA and scale the device density for a cost optimized solution.

The available FPGA-based evaluation design incorporates several key functions including:

- Video frame grabber input for camera connectivity
- SD 2.0 HOST IP including support for higher capacity SDHC cards (SD High Capacity)
- MOST® connectivity through both MediaLB (MLB) interface or Xilinx NIC LogiCORE™ IP
- Additional I2C and I2S
- High Speed UART connectivity

Functions Included	Also Available*
<ul style="list-style-type: none"> • APIX RX and RX interfaces • SD 2.0 • iNAND • SDRAM 	<ul style="list-style-type: none"> • MicroBlaze • UART • CAN Interface • Ethernet Lite
<ul style="list-style-type: none"> • Parallel Flash • Radio Tuner • External Ethernet (Dual MAC and Switch) • Internal FPGA Ethernet 	<ul style="list-style-type: none"> • Automotive High/Low Side Switch Outputs • Port Expander • GPIO
<ul style="list-style-type: none"> • Video Input • Touch Screen • Bluetooth • Intel LPC interface • MOST 	

* Included in EDK but not evaluation design currently

TAKE THE NEXT STEP

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