ScanWorks

PRODUCT BRIEF

ScanWorks® Processor-based Fast Programming for Xilinx Zynq SoC Portfolio

Key Benefits:

- IP provides fast erase, programming, and verification at or near device specs

- Provides in-target in-system programming. Eliminating costly pre-programmed inventory

- Utilizes an existing on-board SoC ARM processor core as an embedded programming engine

- Supports Programming NOR, NAND, Serial Flash, SD/MMC/eMMC

- Supports image object formats BIN, SREC, ELF, and ISO

- Excellent solution for new boards with no software, or boards that will not boot

Key Features:

- Flash Programming test development interface

- ScanWorks test action compliant

- No firmware or OS to load prior to programming sequence

- Bare-metal application that requires no other software, operating system, or boot loader

Overview

ASSET's ScanWorks® Processor-based Fast Programming (PFP) product supports the Xilinx™ Zynq™ All Programmable SoC portfolio. The Zynq devices enable highly differentiated designs for a wide range of embedded applications including multi-camera drivers assistance systems and 4K2K Ultra-HDTV.

The ASSET ScanWorks Processor-based Fast Programming provides near device programming speeds via target resident IP. This new functional programming IP is integrated with the best-in-class ScanWorks test platform. Thus, fast programming capability is easily added into your test program. ScanWorks tools are designed to maximize production efficiency and simplify the test development life-cycle.

Processor-based Fast Programming (Figure 1) uses a target agent to configure the interface between SoC embedded controller and the flash component. The agents are installed in On-Chip Memory (OCM) and provide task specific actions: program, erase, verify, and checksums. The in-target agent tasks ensure

Figure 1. PFP Target Agent with SoC Block Diagram

maximum programming speeds, accurate SoC device control, and flash programming control with only minimal parameters supplied by the end user.

The ScanWorks development environment provides for the control and management of project resources. Once the resources are configured, the action development is intuitive to create a programming action. This environment methodology supports rapid transition from development to deployment and ensures consistency regardless of where the project is deployed. Thus eliminating costly communications mistakes.
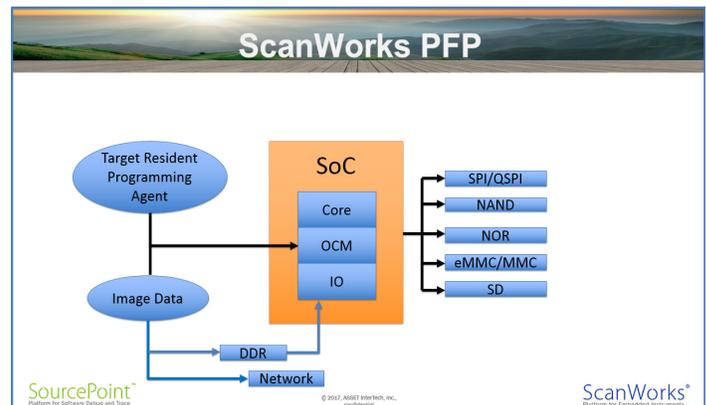
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ScanWorks® Processor-based Fast Programming

Processor-based Fast Programming Development Tool

ScanWorks Processor-based Fast Programming (Figure 2) is the user access point to configure the desired programming events or task and sequence.

Processor-based Fast Programming provides fast programming of all programmable devices supported by the Xilinx Zynq SoC families. Choose your source, destination, verification, and other options giving you full control of the process.
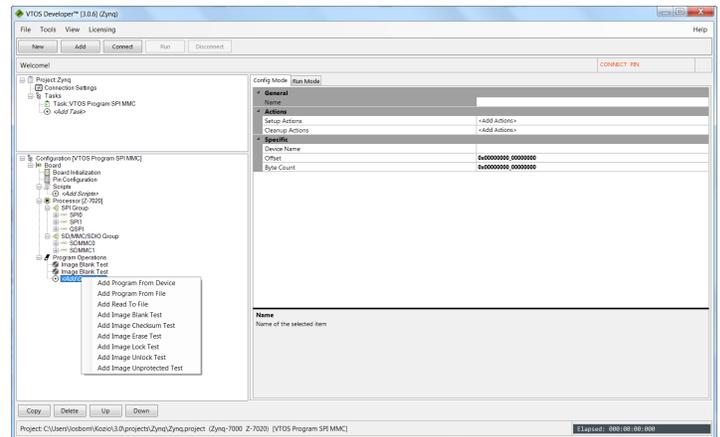

Figure 2. PFP Task Development

The SoC IO setup is a necessary step for programming embedded controller access. The programming setup is aided by the ability to import the IO configuration files (ps_init.c) provided by the Xilinx Vivado tool chain.

Also, shipped with the product are example board configuration files that support the most popular development platforms from Xilinx and their third party partners such as Zedboard and UltraZed-EG.

It then becomes a simple matter of connecting the ScanWorks hardware controller to the UUT and launch the ScanWorks application.

ScanWorks Platform for Embedded Instruments

ScanWorks Platform for Embedded Instruments is a seamless software environment to access, run and collect data from any instrument in your chips, circuit boards or systems. The ScanWorks Platform includes products for Boundary-Scan Test (BST), Processor-based Fast Programming (PFP), Processor-based Functional Test (PFT), Processor-based Functional Test for DDR (PFTDDR), Processor-Controlled Test (PCT), FPGA-based Fast Programming (FFP), FPGA-Controlled Test (FCT) and IJTAG test.

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