Embedded Development HW/SW Kit – Virtex-5 FX70T
PowerPC & MicroBlaze Processor Edition

Embedded Software Ecosystem Support

The Virtex-5 Embedded kit (ML507 board) from Xilinx enables software developers to quickly get started with full-featured embedded Operating System (OS) and Real Time Operating System (RTOS) Board Support Packages (BSP) and tools from various industry-leading vendors. This document provides details about the specific BSPs and tools.

With growing software content in embedded systems, Linux is rapidly growing as a key Embedded OS and hence this kit is supported by Linux reference designs as well as Linux BSP support available from MontaVista, Wind River, LynuxWorks and Timesys.

For deeply embedded applications that have tight real-time and memory constraints, a traditional RTOS is still a key requirement and hence this kit is supported by VxWorks reference designs as well as VxWorks 6.5 BSP support available from WindRiver, Integrity BSP from Green Hills and ThreadX from ExpressLogic.

Embedded Linux Support

1) MontaVista Professional Linux

MontaVista is a leading commercial vendor of Embedded Linux and provides their Professional Linux 4.0 (based on Linux 2.6 kernel) for Virtex-5 FXT/PowerPC440. It is available from their online portal – MontaVista Zone. In order to obtain this BSP and details about support for Professional Linux 5.0, please contact MontaVista (email – sales@mvista.com).

The PowerPC-based embedded processing system in a Virtex-5 FXT FPGA is completely customizable and custom peripherals can added to the system. But unlike fixed processor systems, a new BSP is NOT needed for every change. Xilinx Embedded Development Kit (EDK) provides tools to automatically update the Linux BSP every time the system architecture is modified.

For details on how to use this BSP generation tool with MontaVista Professional Linux and also list of supported peripherals, drivers, refer the “Automatic generation of Linux 2.6 Board Support Packages” section in the following document -
http://www.xilinx.com/support/documentation/sw_manuals/edk10_oslib_rm.pdf

2) Wind River Linux - General Purpose Platform

Wind River is a leading commercial vendor of Embedded Software solutions and provides embedded General Purpose Platform including Linux and Workbench debug tools for Virtex-5 FXT/PowerPC440. Wind River GPP Linux 2.0 BSP is available from their online BSP download center. In order to obtain this BSP, please contact Wind River.

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For details on how to use this BSP generation tool with Wind River GPP Linux 2.0 and also list of supported peripherals, drivers refer the "Automatic generation of Linux 2.6 Board Support Packages" section in the following document - http://www.xilinx.com/support/documentation/sw_manuals/edk10_oslib_rm.pdf

3) LynuxWorks BlueCat Linux

LynuxWorks provides BlueCat Linux 5.4 for Virtex-5 FXT/PowerPC440 with BSPs for the Virtex-5 Embedded Kit. In order to obtain this BSP, please contact LynuxWorks.

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For details on how to use this BSP generation tool with BlueCat Linux 5.4 and also list of supported peripherals, drivers refer the Xilinx-specific BlueCat Linux Board Support Guide in the LynuxWorks Support page - http://www.lynuxworks.com/support/bluecat/docs.php3.

4) Timesys LinuxLink

Timesys provides a unique Web-based service named LinuxLink to build custom Linux images for Virtex-5 FXT/PowerPC440. In order to get access to LinuxLink for Xilinx, please contact TimeSys.

For details on how to build custom Linux images using LinuxLink and supported peripherals, drivers, please refer - http://www.timesys.com/products/processors/xilinx/overview/.

Embedded RTOS Support

1) Wind River VxWorks

Wind River is a leading commercial vendor of Embedded Software solutions and provides embedded General Purpose Platform including VxWorks 6.5 RTOS and Workbench debug tools for Virtex-5 FXT/PowerPC440. Wind River VxWorks 6.5 BSP is available from their online BSP download center. In order to obtain this BSP, please contact Wind River.

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For details on how to use this BSP generation tool with Wind River VxWorks and also list of supported peripherals, drivers refer the “Automatic generation of WindRiver VxWorks 6.5 Board Support Packages” section in the following document - http://www.xilinx.com/support/documentation/sw_manuals/edk10_oslib_rm.pdf

2) Green Hills Integrity

Green Hills provides Integrity, a secure, royalty-free RTOS and MULTI Software Development IDE for Virtex-5 FXT/PowerPC440. In order to get access to the Integrity BSP for Virtex-5 Embedded Kit (ML507), please contact Green Hills.

2) ExpressLogic ThreadX

ExpresLogic provides ThreadX a reliable, light-weight RTOS for the PowerPC440 processor in Virtex-5 FXT Embedded Kit (ML507 board). In order to get ThreadX for Virtex-5 FXT, please contact ExpressLogic.