LabVIEW Embedded For Blackfin

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About this Module

Through numerous demonstrations, this module provides an introduction to the LabVIEW Embedded for ADI Blackfin development environment.
Module Outline

◆ Product Overview
  ● An overview of LabVIEW Embedded for Blackfin

◆ Developing a Simple Application
  ● Building, downloading and running virtual instruments on the blackfin processor

◆ Peripheral Communication
  ● Peripheral control using the Blackfin driver VI’s

◆ Debugging Capabilities
  ● Application tuning using Background Telemetry Channels
  ● Seamless debugging support through the VisualDSP++ development environment

◆ Product Details
What is LabVIEW?

- Developed by National Instruments Inc. (http://www.ni.com)
- Full graphical programming environment
- Target desktop, mobile, industrial, and embedded applications
- Thousands of out-of-the-box mathematics and signal processing functions
- Seamless connectivity with millions of I/O devices
LabVIEW Embedded Module for Blackfin

A comprehensive graphical development approach for embedded design jointly developed by ADI and NI. Seamlessly integrates LabVIEW and VisualDSP++ to deliver an easy to use programming toolset for quicker time-to-market.

- Leverages the system design capabilities and graphical programming of LabVIEW
- Targets Blackfin high performance, low power processor family
- Delivers fully integrated solution from concept to deployment
- Offers ability to reuse existing embedded algorithms
Who can benefit?

- **Domain Experts**
  - The ease of use and power of LabVIEW enables the domain expert to focus on what they do best

- **Embedded Developers**
  - Faster development cycle with reusable components out of the box

- **Test Engineers**
  - Leverage existing LabVIEW expertise in the design and implementation cycle as well as test

- **Quality Engineers**
  - Consistent use of common tools through the product life cycle means less integration issues and better product quality
Architectural Overview

Customer Application

- LabVIEW
- VisualDSP++

Generated C Code
- Component Drivers
- Blackfin Optimized VIs
- VisualDSP++ Kernel (VDK)

Blackfin
Blackfin EZ KIT Lite Evaluation Hardware

◆ Features
  ● 600Mhz ADSP-BF537 Blackfin Processor
  ● High-performance debug agent
  ● Integrated Ethernet
  ● Educational Laboratory Virtual Instrumentation Suite (NI ELVIS) interface
◆ Emphasis on modularity and expandability
  ● Numerous I/O Daughter Cards Available for system prototyping
Demonstration Setup

- HP-USB JTAG Emulator
- ADSP-BF537 EZ-Kit Lite
- Audio Line In
- Audio Line Out
- USB 2.0
- JTAG
Product Details

- Available from both Analog Devices and National Instruments
- Full technical support through National Instruments
- Package Includes:
  - NI LabVIEW Full Development System
  - ADI VisualDSP++ Full Development Seat
  - LabVIEW Embedded Module for ADI Blackfin
  - ADSP-BF537 EZ-Kit Lite evaluation package
  - Cabling and headphones
  - Data acquisition adapter
  - Automatic software updates and support available
Conclusion

The LabVIEW Embedded Module for ADI Blackfin Processors delivers:

- Faster time to market of embedded systems
- The ability to more quickly incorporate advanced features and functions as market technologies change
- Improved quality through consistent use of common tools through the product life cycle.
For Additional Information

or National Instruments: [http://www.ni.com](http://www.ni.com)

- On VisualDSP++:
or Analog Devices: [http://www.analog.com](http://www.analog.com)

Or click the “Ask A Question” button