

Blackfin® USB-LAN EZ-Extender Board Support Package (BSP) v1.0.1 Release Notes

These release notes subsume the release notes for previous updates. Release notes for previous updates can be found at the end of this document.

New Features and Examples

Release 1.0.1 supports the recent release of the uC/USB Device Class Vendor 1.0.1 software product which includes Vendor Class examples for the ADSP-BF533 and the ADSP-BF561 processors. These examples require an updated NET2272 USB Controller driver that is part of this release. In addition, this release addresses several anomalies as listed below in the *Software Issues Addressed in this Release* section of this document.

No new features or examples are otherwise included in this release.

Software Requirements and Product Dependencies

- To build the example projects included in the USB-LAN EZ-Extender BSP 1.0.1, CrossCore Embedded Studio version 1.0.1.2 or later is required.
- The uC/USB Device Class Vendor for Cross Core Embedded Studio software product also contains examples that require the USB-LAN Extender BSP software product. The versions of the uC/USB products that must be used are
- uC/USB Device Core for for CrossCore® Embedded Studio 1.0.1 or later
- uC/USB Device Class Vendor 1.0.1 or later

Test Configurations

The products and versions used to test the BSP are:

1. CrossCore Embedded Studio version 1.0.1.2.
2. USB-LAN EZ-Extender 2.1
3. uC/USB Device Core for for CrossCore® Embedded Studio 1.0.1
4. uC/USB Device Class Vendor 1.0.1

Documentation

This release contains no new documentation.

Software Issues Addressed in this Release

The following software anomalies have been addressed in this release:

- A memory corruption issue caused by ADI_USBD_DEV_Open() has been resolved
- An issue caused by placing the application heap in L3 has been resolved

- An issue where the VendorBulkDemoBF561 was crashing when the heap was placed in L1 has been resolved.
- Initialization of USB memory data structures was corrected.
- Issue with the display of wrong target processor while running host application was corrected.
- A few anomalous build warning messages were removed.
- An issue where the CCES IDE was not efficiently guiding the user when upgrading from USB-LAN EZ-EXTENDER 1.0.0 to USB-LAN EZ-EXTENDER 1.0.1 has been addressed. The CCES IDE now prompts the user to upgrade examples from the USB-LAN EZ-EXTENDER 1.0.0 product to the USB-LAN EZ-EXTENDER 1.0.1 product

Known Issues

There are no known issues as of this release.

Installation Logging

The installer does not create a log file by default. If you encounter installation issues, you can generate an installation log file by running the installer from the command prompt.

Change to the directory containing downloaded installer executable and run the following from the command prompt:

```
ADI_USBLAN_EI1_EZExtender-Rel1.0.1.exe /v"/l*v c:\temp\installer.log"
```

Blackfin® USB-LAN EZ-Extender Board Support Package (BSP) v1.0.0 Release Notes

Thank you for installing the USB-LAN EZ-Extender Board Support Package (BSP). The BSP provides software and documentation in support of the USB-LAN EZ-Extender daughter board. This daughter board is used in conjunction with [ADSP-BF533 EZ-KIT® Lite](#), [ADSP-BF537 EZ-KIT® Lite](#), [ADSP-BF561 EZ-KIT® Lite](#).

The USB-LAN EZ-Extender is designed for use with CrossCore® Embedded Studio (CCES) for Analog Devices Processors software development tools. The CCES development environment aids advanced application code development and debug, such as:

- Create, compile, assemble, and link application programs written in C++, C, and assembly
- Load, run, step, halt, and set breakpoints in application programs
- Read and write data and program memory
- Read and write core and peripheral registers
- Plot memory

For more details on CCES, please visit www.analog.com/cces. For more on the USB-LAN EZ-Extender, please visit <http://www.analog.com/en/evaluation/bf-extenderul/eb.html>

The USB-LAN EZ-Extender BSP provides comprehensive software support for the USB-LAN EZ-Extender daughter board. Specifically, drivers and examples are included for the following components:

- SMSC LAN91c111 Ethernet controller
- Net2272 USB Controller

The BSP also provides comprehensive examples which demonstrates the services. TCP/IP examples based on USB-LAN EZ-Extender are available in the lwIP product which uses this BSP. USB Vendor Class based examples are present inside the BSP itself which demonstrates the data transfer over Bulk endpoints.

The CCES Help environment provides complete hardware and software documentation.

License Checking

There are no license requirements for the USB-LAN EZ-Extender BSP.

Installation Logging

The installer does not create a log file by default. If you encounter installation issues, you can generate an installation log file by running the installer from the command prompt.

Change to the directory containing downloaded installer executable and run the following from the command prompt:

```
ADI_USBLAN_EI1_EZExtender-Rel1.0.0.exe /v"/l*v c:\temp\installer.log"
```

Support and Assistance

There are several options for contacting support:

- Submit your questions online at:
- <http://www.analog.com/support>
- E-mail your Processor and DSP software and development tools questions from within CrossCore Embedded Studio:
- Go to "Help->E-mail Support...". This will create a new e-mail addressed to processor.tools.support@analog.com, and will automatically attach your CrossCore Embedded Studio version information (ProductInfo.html).
- E-mail your Processors and DSP applications and processor questions to:
- processor.support@analog.com OR
- processor.china@analog.com (Greater China support)
- Post your questions in the Processors and DSP online technical support community in Engineer Zone at:
- <http://ez.analog.com/community/dsp>

Software Requirements

To build the example projects included in the USB-LAN EZ-Extender BSP, CrossCore Embedded Studio version 1.0.1 or later is required. For TCP/IP examples using USB-LAN EZ-Extender lwIP (Lightweight TCP/IP Stack) 1.0.1 or later is required.

Test Configurations

The products and versions used to test the BSP are

1. CrossCore Embedded Studio version 1.0.1.
2. USB-LAN EZ-Extender 2.1

Adding a Driver to a Project

When adding "Net2272 USB Device Controller Driver" addin, the IDE will add the sources for the driver to the CCES Project folders, starting at "system". There will be a folder specific to the driver(s) or service(s) you have added under this folder.

When adding SMSC LAN91c111 Ethernet module the IDE will add the required include paths and pre-built binaries to your project.

Creating a project which includes a USB-LAN EZ-Extender drivers

In order to create a project you should follow the instructions provided in the CrossCore Embedded Studio help. As part of the project creation, the page "Add-in selection" contains a list of all the available add-ins for the project that you are creating based on the installed products and the project's chosen processor and type. You can see the drivers in support of the USB-LAN EZ-Extender under the "Device Drivers and System Services" category. Within this category you will see "USB LAN EI1 Extender Board Drivers" which contains the drivers for "Net2272" and you will also see "Etherent" which contains the SMSC LAN91c111 driver binary.

The USB-LAN EZ-Extender add-in generates a call to `adi_initComponents()`. For more information on `adi_initComponents()`, please refer to the CCES help section:

CrossCore Embedded Studio 1.0.1 > Graphical Development Environment > System Configuration

Adding a driver to an existing project

Every CrossCore Embedded Studio project contains a System Configuration file called `system.svc` which is located in the root of the project. The file is the IDE's interface for managing the various pre-written software components used in the "system" implemented by a project. Double-clicking any `system.svc` file in a navigation view opens that file in the System Configuration Utility which allows you to see the add-ins that you currently have in your project. Click on "Add..." and select the "USB-LAN EI Extender Board Drivers" add-in which is under the "Device Drivers and System Services". For adding USB driver select "NET2272 USB Device Controller driver" under "USB". For adding "LAN91c111" ethernet binaries select "SMSC LAN91c111 Etherent Module".

Notes:

- If the IDE detects that `adi_initComponents()` is not yet present in `main()`, it prompts you to add it and offers to insert it for you.

Configuration

There are no USB-LAN EZ-Extender driver configuration options available in the IDE.

Interrupts

CrossCore Embedded Studio provides a coherent interrupt management mechanism which allows for the same interface to be used in RTOS and non-RTOS applications. This means that interrupt service routines in all applications must be written in C and use the `adi_int` interface. Any thread-safety requirements or interactions with tasks are handled by the `adi_int` interface. For more information on the `adi_int` API, in CrossCore Embedded Studio go to Help > Search and enter `adi_int`.

Examples of the usage of this interrupt management mechanism are the System Services and Device Drivers provided with Crosscore Embedded Studio. By using the `adi_int` interface, the same services and drivers can be used in all applications regardless of whether an operating system is used.

Sketches and Examples

Sketches

None

Examples

The USB-LAN EZ-Extender BSP provides the following examples.

1. USB Vendor bulk example for ADSP-BF533 and ADSP-BF561.

Note: TCP/IP examples based on LAN91c111 driver are provided in lwIP (Lightweight TCP/IP Protocol Stack) version 1.0.1 or later.

Location

In order to locate the USB-LAN EZ-Extender examples you should use the CrossCore Embedded Studio Example Browser:

- Open CrossCore Embedded Studio's Example Browser which can be found in CrossCore Embedded Studio under Help. Select in the Product section "USB-LAN EZ-Extender" for a full list of examples.

Documentation

API documentation for the drivers included in the USB-LAN EZ-Extender BSP can be found in CCES Help.

General information on the driver model can be found in CCES help under

CrossCore® Embedded Studio 1.0.1 > System Runtime Documentation > System Services and Device Drivers

MISRA-C Support

MISRA C is a software development standard for the C programming language developed by the Motor Industry Software Reliability Association (MISRA). Its aims are to facilitate code safety, portability, and reliability in the context of embedded systems, specifically those systems programmed in ANSI C. The compiler detects violations of the MISRA rules at compile-time, link-time, and run-time.

System Services and Device Driver Thread Safety

All system services and device drivers (SSLDD) use mutexes and semaphores to ensure thread-safety. If an RTOS is present then the SSLDD will use the RTOS mutex and semaphores. If an RTOS is not present then the SSLDD will use a non-RTOS implementation of mutexes and semaphores (spin locks).

Known issues with the USB-LAN EZ-Extender Board Support Package (BSP)

- For the ADSP-BF561 example VendorBulkDemoBF561, an issue is seen when heap is placed in L1 memory. Currently the heap is placed in L2 memory to make the example stable.