ADuCM350BBCZ Device Drivers Library

Getting Started Guide

Release 2.4.0.0 – December, 2015

Welcome to 2.4.0.0 release of the Analog Devices, Inc. (ADI) ADuCM350BBCZ Device Drivers Library. This release also includes a number of example applications that work with ADuCM350BBCZ evaluation board, "Eval-ADUCM350EBZ".

Please review both the *ADuCM350BBCZ Device Drivers Release Notes* (located in the same place as this *Getting Started Guide*), and the *ADuCM350BBCZ Software Users Guide* for the most recent release status, software and hardware requirements and device driver configuration details.

ADUCM350BBCZ DIRECTORY STRUCTURE

The driver package is typically installed *outside* the tool chain directory in default location "c:\Analog Devices\ADuCM350BBCZ".

Various toolchain-specific system support files are installed (dictated by the toolchain hierarchy), allowing the tools to configure, recognize, build and debug ADuCM350BBCZ projects.

The following toolchain root is assumed (assuming one of the required toolchain is installed, whereas if no toolchain is present, then no system files would be installed; only the device drivers themselves):

```
C:/Program Files/IAR Systems/Embedded Workbench (Revision#)/
```

The installer prompts to place the device drivers, system startup, and examples directories *outside* of the Windows "Program Files" directory due to recent access violations imposed by Microsoft.

Assuming $**EWARM_ROOT**$ is the tool chain directory root and $**ADUCM350BBCZ_ROOT**$ is the device driver install root (default is "c:\Analog Devices\ ADuCM350BBCZ"), then the following files are installed:

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`$EWARM_ROOT$/ARM/CONFIG`

This directory contains various IAR configuration files for debugger, device database entries, flash loader files, linker description files, help files, etc.

`$EWARM_ROOT$/ARM/INC`

This directory contains the IAR configuration file that describes device register access definitions for the debugger.

`$EWARM_ROOT$/ARM/SRC`

This directory contains the complete flash downloader source file set and build project.

`$ADUCM350BBCZ_ROOT$/DOC`

This directory contains complete HTML documentation for all the ADuCM350BBCZ Device Drivers and API, as well as the device driver Release Notes, Getting Started Guide and Software User's Guide.

`$ADUCM350BBCZ_ROOT$/EXAMPLES`

Contains various examples and project files, demonstrating use of the ADuCM350BBCZ device drivers.

`$ADUCM350BBCZ_ROOT$/INC`

Contains the ADuCM350BBCZ Device Driver include files and default driver configuration files.

`$ADUCM350BBCZ_ROOT$/OSAL`

Contains the OSAL (Operating System Abstraction Layer) interface, which supports RTOS portability.

`$ADUCM350BBCZ_ROOT$/SRC`

Contains the ADuCM350BBCZ Device Driver source files.

`$ADUCM350BBCZ_ROOT$/TOOLS`

Contains ADuCM350BBCZ tool extensions, such as the pin multiplexing java packages, a modified version of IAR's iElfTool (supporting embedding CRC checksums and parity encodings into an executable), serial port downloader utility, etc.

`$ADUCM350BBCZ_ROOT$/USB`

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Contains the USB device porting files for the ADuCM350BBCZ which are used in conjunction with the stock Micrium USB content.

DOCUMENTATION

The following documentation is provided for this release of the ADuCM350BBCZ Device Drivers in pdf format under the main product documentation directory:

… /ADuCM350BBCZ/Eval-ADUCM350EBZ/doc/ (started with index.html)

The pdf documents are:

ADuCM350BBCZ Device Drivers Getting Started Guide.pdf (this file)

ADuCM350BBCZ Device Drivers Release Notes.pdf

ADuCM350BBCZ Device Drivers Release Notes.rtf

ADuCM350BBCZ Software Users Guide.pdf

The *ADuCM350BBCZ Device Drivers API Reference Manual* is published in hyperlinked html format under the html directory. Launch the "…/ADuCM350BBCZ/Eval-ADUCM350EBZ/doc/html/index.html" file to browse the API documentation interactively.

The *ADuCM350BBCZ Device Drivers API Reference Manual* contains complete Library documentation, including API descriptions, data types, structures, parameters, return values, etc.

The ADuCM350 documentation package can be downloaded from the ADuCM350 product page (follow the "Download the complete design file resource package" link, registration required). The documentation package contains the *ADuCM350 Hardware Reference Manual / Product User Guide (UG-587)*, the *ADuCM350 Data Sheet* and a number of application notes, including the *Eval-ADUCM350EBZ User Guide (UG-668)*. See the support section below for a link to the product page.

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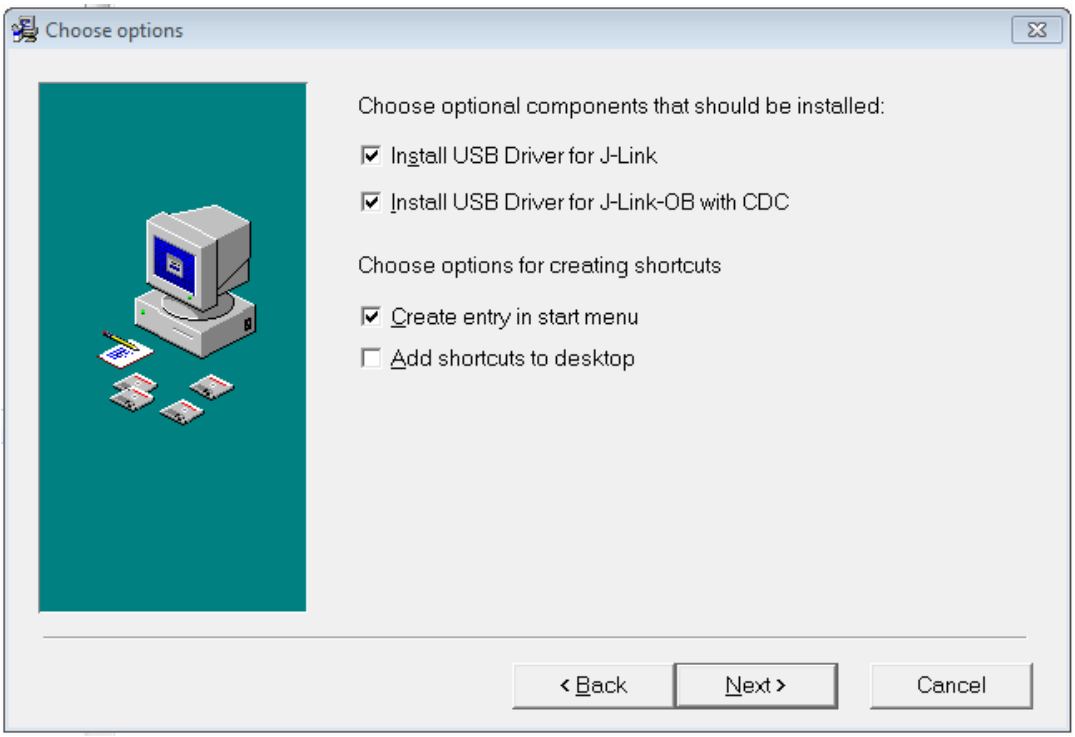
UART-TO-USB TRANSCEIVER SOFTWARE INSTALLATION

Some example programs use the Segger UART-to-USB transceiver chip on the USB-SWD/UART-EMUZ (Rev.C) emulator board to communicate results to the host PC. The transceiver chip may prompt for a Windows driver when the USB connection is first made. The PC driver creates a “virtual” COM port under the USB interface. The device driver and board setup for these examples is as below.

USB SERIAL DRIVER INSTALLATION

Eval-ADUCM350EBZ Rev.B boards use the SEGGER J-Link LITE chip on an Analog Devices companion serial-to-USB converter and emulator board, "USB-SWD/UART-EMUZ". The J-Link software package can be downloaded from the link below. Please ensure to select both "Install USB Driver for J-Link" and "Install USB Driver for J-Link OB with CDC" options, as shown.

http://www.segger.com/jlink-software.html



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SETUP TERMINAL ON PC

Most of the provided examples use semi-hosting to send text output to the debugger over the debug interface (semi-hosting is documented in the *Getting Started Guide* and the *Software Users Guide*). Some examples however, employ the use of the on-chip UART controller which can communicate with the host PC via a virtual COM serial "device" running over a USB interface *without* a debugger.

These real UART output examples rely on a terminal emulator, e.g., HyperTerminal, PuTTY (free Telnet/SSH Client), Hercules or equivalent PC based terminal application to interact with the target over UART. To setup a terminal session, configure a terminal session on the PC as follows.

Select the appropriate communications channel COMx (or use Device Manager to locate the "JLink CDC UART Port (COMx)" device under the Device Manager "Ports (COM & LPT)" section, where "x" corresponds to the target communications serial Port). Then set the following attributes:

Communications Settings:

- Baud rate : 115200
- Data : 8 bit
- Parity : none
- Stop : 1 bit
- Flow control : none

Note that these are the default settings for most examples. If an example requires different settings, it will be noted in that example's Readme.

HARDWARE SETUP

The ADuCM350 device is required to run any of the projects in the examples folder. Most examples can be run with the Eval-ADUCM350EBZ motherboard alone. The Analog Devices USB-SWD/UART-EMUZ emulator board is required to download code from the to the ADuCM350 device on the motherboard. A mini-USB cable connects this board to the PC, which will also provide power to the motherboard, including the ADuCM350 device. The emulator board and mini-USB cable are provided in the Eval-ADUCM350EBZ evaluation kit. For further information on the configuration of ADuCM350 hardware, see the *Eval-ADUCM350EBZ User Guide (UG-668)*.

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TECHNICAL OR CUSTOMER SUPPORT

You can reach Analog Devices, Inc. Customer Support at:

- Visit the EngineerZone ADuCM350 Design Support Community at
  http://ez.analog.com/community/analog-microcontrollers/aducm350
  for FAQs and a forum for discussion with Analog Devices Applications Engineers.
- Visit the ADuCM350 Product Page at
  http://www.analog.com/aducm350
  to order hardware and for software and documentation downloads.
- For IAR tool chain support please visit
  http://www.iar.com/support
- Phone questions to 1-800-ANALOGD
- Contact your Analog Devices, Inc. local sales office or authorized distributor
- Send questions by mail to:
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