ADSP-2156x EZ-KIT® Board Support Package v1.0.0

http://www.analog.com
processor.tools.support@analog.com

Contents

1 Release Notes

Thank you for installing the ADSP-2156x EZ-KIT® Board Support Package (BSP). The BSP provides software and documentation in support of the ADSP-21569 EZ-KIT®.
The ADSP-21569 EZ-Kit 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.
The ADSP-2156x EZ-KIT® BSP provides comprehensive software support for the ADSP-21569 EZ-KIT. In this release, various examples are provided to demonstrate the on-chip drivers and services.

2 Release Dependencies:

- Requires CrossCore® Embedded Studio version 2.9.1
- ADSP-2156x EZ-KIT® Rev B, BOM Rev B.

3 Examples:

3.1 Power_On_Self_Test:

This example allows the user to test many peripherals of the ADSP-21569 EZ-KIT®. Readme_Power_On_Self_Test_21569.html is provided in the POST example to understand how these tests are run.

3.2 Device_Programmer:

This example allows the user to program the flash device on the ADSP-21569 EZ-KIT® in conjunction with the "Command-Line Device Programmer (cldp)".

A pre-built binary exists so that users can just program the flash device without having to build the example.

3.3 Device Drivers examples:

Examples are provided for following peripherals-

- ADC
- Asynchronous Sampling Rate Converter (ASRC)
- Cyclic Redundancy Check (CRC)
- Security Packet Engine (PKTE)
- FIR Accelerator
- Housekeeping ADC (HADC)
- IIR Accelerator
- LinkPort (LP)
- Octal SPI (OSPI)
- Genral Purpose Counter (Rotary Counter/CNT)
- Sony/Philips Digital Interface (S/PDIF)
- Serial Peripheral Interface (SPI)
- Serial Port (SPORT)
- Thermal Monitoring Unit (TMU)

- Two-Wired Interface (TWI)
- Universal Asynchronous Receiver Transmitter (UART)

3.4 System Services examples:

Examples are provided for following peripherals-

- Enhanced Memory DMA (EMDMA)
- General Purpose Ports (GPIO)
- Memory DMA (MDMA)
- Clock Generation Unit (CGU/PWR)
- Reset Control Unit (RCU)
- System Memory Protection Unit (SMPU)
- Standard I/O (STDIO)
- General Purpose Timer (TMR)
- Watchdog Timer (WDOG)

4 Known Issues:

4.1 POST

1. adi_post_flash2_test does not work in the standard loop but works fine in standalone mode. So to test the Macronix flash relying on this test in standalone mode is recommended
2. adi_post_rotary_test has been excluded from standard loop to conflict on pin-mux with Link Port. To test Rotary switch, select the test in stand alone mode and ensure that Link Port cable is not connected.

4.2 Device Programmer

1. Device Programmer example does not work in release mode.
2. SPI Fast Mode is required to be enabled if SPI clock is configured to run at more than 45.875 MHz.

4.3 Device Drivers and Services Examples

4.3.1 Rotary Counter:

- Intermittent failures in the Rotary Counter Example.

4.3.2 GPIO:

- GPIO examples do not run as expected in release mode.

4.3.3 ADC:

- Sometimes noise is observed when SPDIF_ASRC_DAC_AudioPassthrough example is ran across EZ-KITs of different revisions. Provide a hardware reset/power-up and reload the application to avoid the noise.

4.3.4 Public JIRA

1. EZKSW25-21: Some examples fail if "Restart" button in debug window is used to re-run the same example after it has run once.
2. EZKSW25-74: SPI_XIPCodeExecution example should only be used in Debug mode configuration. Release mode configuration build fails.

3. EZKSW25-77: OSPI test in POST example should only be used in Release mode configuration. Debug mode configuration test fails. Since OSPI test is not a part of standard loop, POST standard loop works fine in both Release mode and Debug mode.