

## ADSP-BF533 EZ-KIT Lite® and ADF70xx Interface

by Austin Harney and Regis Guillermin

This application note explains how to quickly interface the ADF70xx transceiver board with the EZ-KIT board.

### HARDWARE DESCRIPTION

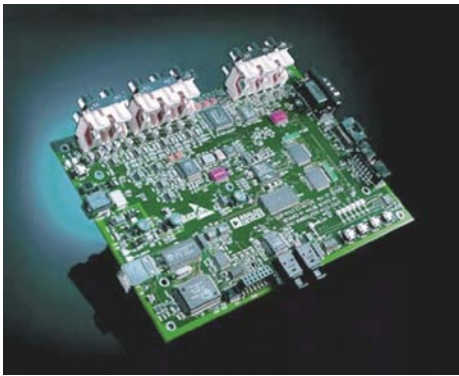


Figure 1. ADSP-BF533 EZ-KIT Lite Board (Rev. 1.1)

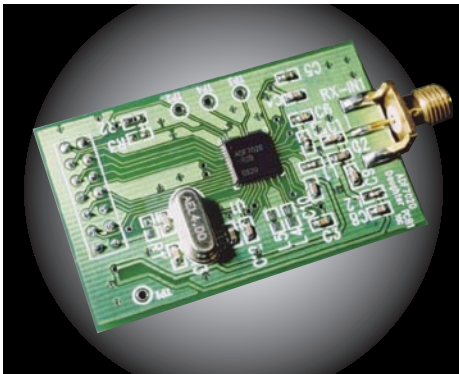


Figure 2. ADF70xx Daughter Board (Rev. A)

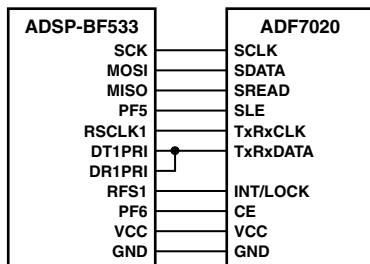


Figure 3. Connections Between the ADSP-BF533 and the ADF70xx

### CONNECTIONS

- USB cable (type A to B) between the host computer and the EZ-KIT board
- EZ-KIT power supply (7.5 V dc/~2 A)

### SOFTWARE DESCRIPTION

- VisualDSP++® (v3.5) with license or 90-day free test drive
- **EZKIT-70xx\_interface.zip** code file
- USB drivers

Analog Devices software and processor manuals are available at the following links:

Blackfin® Processor

<http://www.analog.com/processors/processors/blackfin/index.html>

Blackfin Processor Manuals

<http://www.analog.com/Processors/Processors/blackfin/technicalLibrary/manuals/blackfinIndex.html>

VisualDSP++ Development Software

<http://www.analog.com/processors/resources/crosscore/visualDspDevSoftware.html>

ADSP-BF533 Processor Data Sheet

<http://www.analog.com/processors/processors/blackfin/dataSheets.html>

### GETTING STARTED

- Configure the switches as shown in Figure 5. Once everything is connected and you see the LED11 (USB Monitor) switched, launch VisualDSP++.
- Open the project **EZKIT-70xx\_interface.dpj** in the **Project** menu.
- Click **config\_easy.h** on the left project panel. This file contains the register settings to configure the ADF70xx in either transmit or receive mode. You can also set the data rate, configure the readback mode, and enter in some dummy data to be transmitted. When the ADF70xx is configured as a receiver, the data is stored in the **log\_buffer** file; similarly, when you use the readback function, the data is stored in the **readback** file. The data packet consists of 48 bits of preamble, 24 bits of synchronization, and 184 bits of dummy data for a total of 256 bits.

- Next you can build the project using the **Rebuild All** command in the **Project** menu. The compilation should be **completed successfully** and load the code into the board.
- To run the program, click **Run** on the **Debug** menu. The LED4 should be on.
- Choose the mode. The program is a loop, so when LED4 reappears the mode is finished, and you can choose the mode again, and so on. To check if it's working or not, probe the INT/LOCK pin (Pin 7) on the receive side to know if the synchronization word is detected.

Figure 4 shows the different modes with switches that you can use.

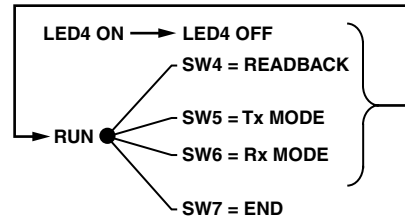


Figure 4. Usable Modes with Switches

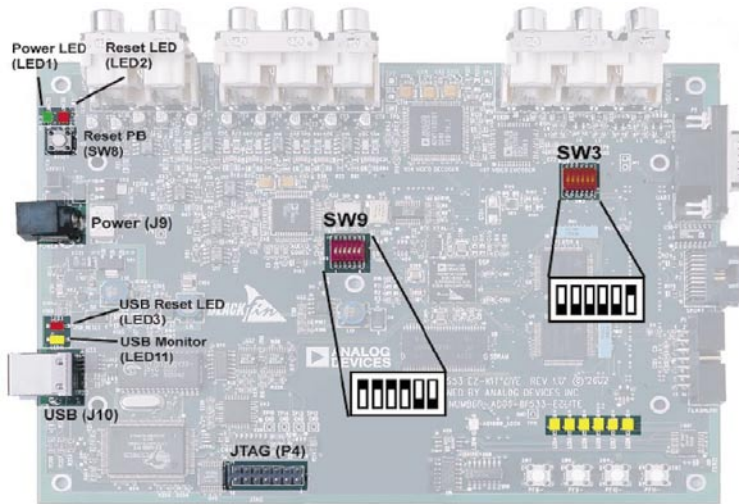


Figure 5. Switch Default Configuration

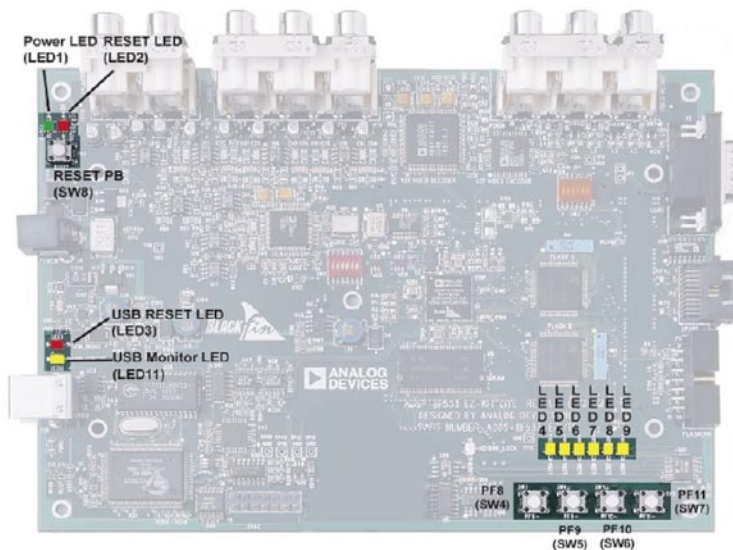


Figure 6.

- SW4** = Readback
- SW5** = Tx mode
- SW6** = Rx mode
- SW7** = End
- LED4 On** = Idle state, waiting for a mode
- LED4 Off** = Busy state