AVR32933: EVK1105AU Getting Started Guide

Features

- **Powering up the board**
- **Preparing the board for audio playback**
- **Playing music**

1 Introduction

The EVK1105AU is a reference design and development system for the AT32UC3A0512AU, a 32-bit Atmel® AVR® audio microcontroller from Atmel Corporation.

From a hardware point of view, the EVK1105AU is identical to the EVK1105, so you can refer to the EVK1105 for more information (schematics, BOM, etc.). The only difference is that the main microcontroller is an AT32UC3A0512AU instead of an AT32UC3A0512.

The AT32UC3A0512AU is an audio microcontroller that authorizes execution of Atmel licensed Audio firmware IPs such as commercial MP3, AAC, WMA audio decoders.

The kit is equipped with a rich set of memories and peripherals that make the EVK1105AU a perfect audio platform. This guide shows the user how to get quickly started with this kit.

Figure 1-1 EVK1105AU board



32-bit Atmel Microcontrollers

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2 Powering up the board

The EVK1105AU offers three interfaces to power the board, from one of the two USB interfaces or from an external source connected to the header J1. The board can be powered from 3 different sources, external power supply, “USB VCP” and “USB USER” connector. If two power sources are applied at the same time the following priorities are used to select the current valid power source:

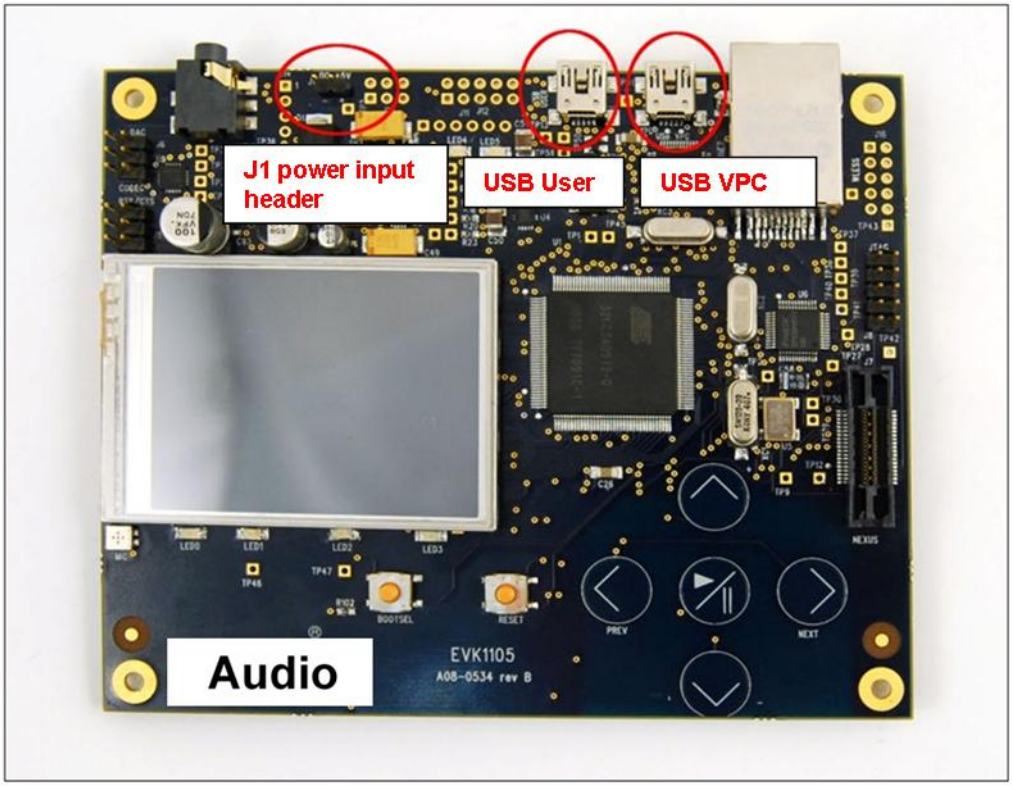
1. External power supply (header J1)
2. USB VCP
3. USB USER

That means that if an external power supply is connected to the board it has the highest priority and will therefore serve as current power supply. Other power supplies that are connected to the board at the same time will be ignored.

The input range on the external power supply header is from 3.3V to 5V. In order to be able to supply external USB devices that are connected to the board the minimal power supply specification should be 5V, 1A. This ensures that the board will work properly if a USB device is connected that needs the maximum allowed 500mA as specified in the USB specification. It is not possible to draw that amount of current from the host through a normal USB cable but there are cables available that can be connected to two hosts (such a cable is not a kit content).

In order to play music from a mass-storage device it is enough to power the board from the USB VCP connector. Use the “Mini-B plug to std-A plug 1.5m USB2.0” cable that is included in the kit and connect it between the host and the board USB VCP connector.

Figure 2-1 Possible power input interfaces on the EVK1105AU



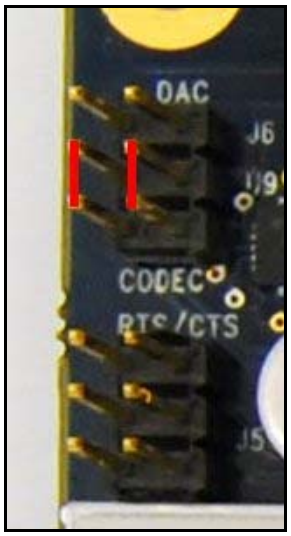
More information about the different power inputs is available in the hardware user's guide.
When the board is powered the green LED, marked with "PWR", will light up and the default board firmware will start to run.

3 Preparing the board for audio playback

n order to play some music a USB mass-storage device must be connected to the "USB USER" connector by using the "Mini-A plug to std-A receptacle" adaptor cable. The adaptor cable is a kit content.

The default audio output should be configured to use the on board codec and thus the jumpers on J6 should be set as indicated in the figure if not already set up like this.

Figure 3-1 Jumper settings on J6 for codec output to headphones



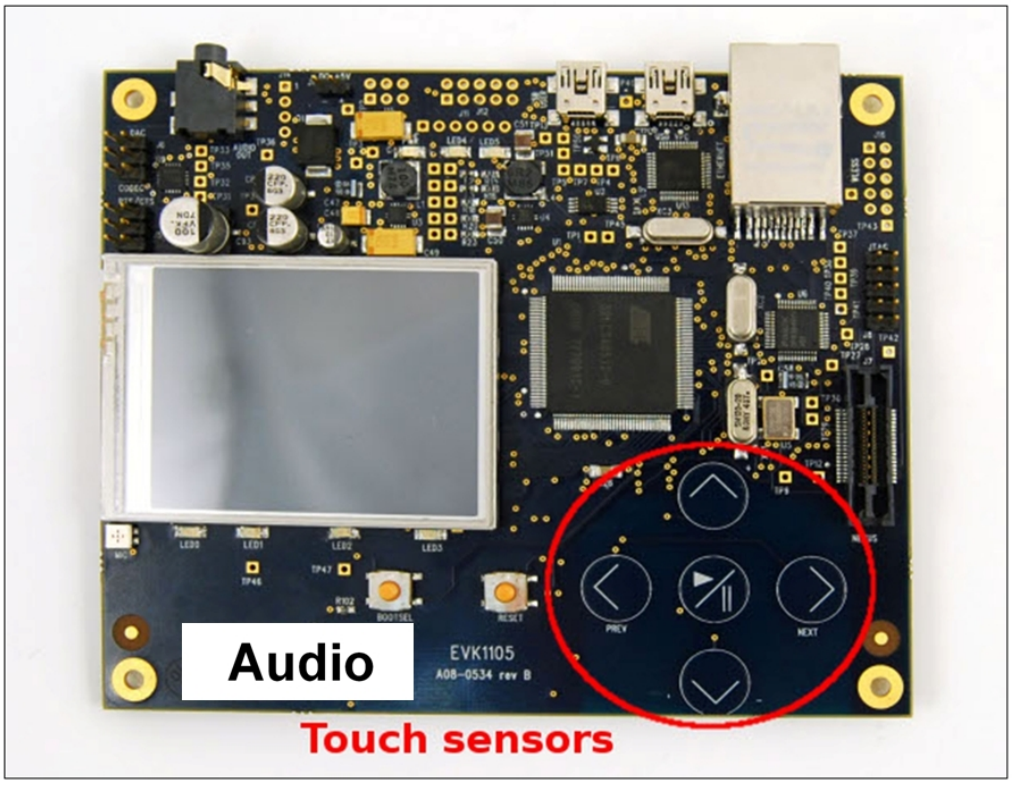
Connect a headphone or speaker to the jack in order to listen to the music.

4 Browsing the disk and playing music

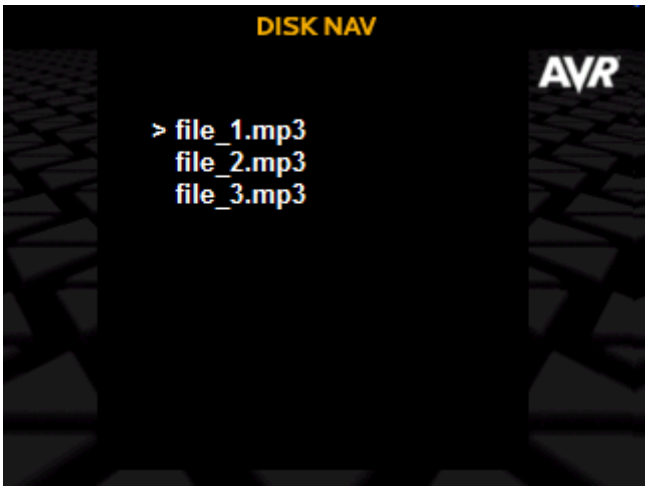
After a mass-storage device has been connected to the USB-USER port the player enters the disk browsing view. To control the application the touch sensors can be used that are marked in the

Figure 4-1.

Figure 4-1 Touch sensors for controlling the audio application



4.1 Disk browsing view

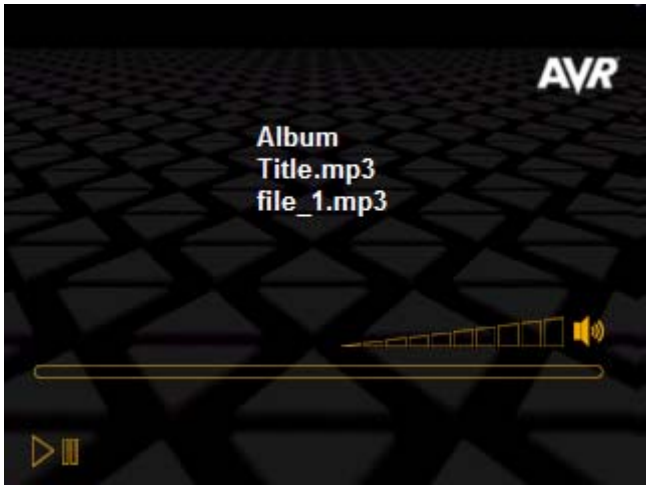


In this view it is possible to browse the storage media but only MP3 files and directories will be shown. Use the touch sensors to browse the storage media for the music file or playlist you want to play.

- UP: Browse the file list up.
- DOWN: Browse the file list down
- LEFT: Enter the parent directory. If the user is in the root directory of the current selected storage media a touch of this button will result in a menu which lets the user select a storage media.
- RIGHT: Enter a subdirectory or play the currently selected file or playlist.
- CENTER or RIGHT: Play the currently selected file or playlist.

By playing a file or a playlist the audio player will change its view from the disk view to the play view.

4.2 Play view



Following functionality have the touch sensors in the play view.

- UP: Increase the volume.
- DOWN: Decrease the volume.
- LEFT: Play previous song in playlist or on disk.
- RIGHT: Play the next song in playlist or on disk.
- CENTER: Play/Pause.
- Slide-LEFT*: go back to the navigation window. In this mode, the current file is still playing, and the user can browse the disk and select a new audio file with CENTER or RIGHT. User can also switch back to the play view with a Slide-RIGHT**: it will display the current playing file.
- Slide-RIGHT**: repeat/shuffle modes. While in the play mode, this key gives access to the repeat/shuffle modes. UP or DOWN selects the Repeat or Shuffle mode. Press CENTER to change mode. Go back to the Play view with Slide-LEFT*.

* Slide-LEFT consists of the following sequence: press CENTER, press LEFT, release CENTER, release LEFT.

** Slide-RIGHT consists of the following sequence: press CENTER, press RIGHT, release CENTER, release RIGHT.

5 References and further information

EVK1105 hardware reference: This is included in the AVR Studio® 5 and on the avrfreaks wiki page (http://www.avrfreaks.net).

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