STSW-STM32022

Implementing the ADPCM algorithm in STM32F1xx and STM32L1xx microcontrollers

Data brief

Features

- ADPCM algorithm features
  - Light memory footprint
  - Selectable sampling rates
  - Selectable quality/compression ratio
- STM32F1 implementation features
  - Ease of use with the I²S Audio codec
  - Friendly user interface by the mean of the LCD
- STM32L1 implementation features
  - Simple PWM audio signal generation
  - Limitation of the external components

Description

Audio data usually are very demanding in terms of memory storage, the needed memory space can be reduced by compressing the audio data via a specified compression method.

The STSW-STM32022 software solution reconstructs audio signals from compressed samples. A simple audio codec based on an adaptive differential pulse coded modulation (ADPCM) algorithm is used and advantage is taken of the powerful ARM® Cortex® M3 core.

The STSW-STM32022 is developed for standard library package and intended to be used with STM32L1xx discovery board or STM32F1xx evaluation board, therefore this implementation will be easily portable to other platforms.

For more details on ADPCM algorithm in STM32F1xx microcontrollers, refer to application note AN2931.

For more details on ADPCM algorithm in STM32L1xx microcontrollers, refer to application note AN4453.

Ordering information

STSW-STM32022 is available for free download from STMicroelectronics.

Revision history

Table 1. Document revision history

Date	Revision	Changes
02-Apr-2015	1	Initial release.