Freescale MQX Example Guide
ESAI&ASRC example

This document describes the ESAI and ASRC component example application. This example consists 3 cases:

- ESAI playback: This example only supports the 48k, 16bit wav file now.
- ESAI record: This example only supports the 5 second, 48K, 16bit wav file record. And for the microphone without amplifier, it is not supported now.
- ESAI-ASRC playback: This example only supports the 44.1k, 16bit audio playback now.

Running the example

ESAI Playback

- Start a terminal application on your PC and set the serial connection for 115200 baud rate, 8 data bits, 1 stop bit, no parity and no flow control.
- Prepare a SD card with a 48k, 16bit.
- Insert your headphone into the P4 in the vybrid_autoevb board.
- Type the “play a:\$FILE_NAME” in the terminal, you would see the printed message as the following.

```
shell> ESAI&ASRC card demo

Shell (build: Oct 30 2013)
Copyright (c) 2013 Freescale Semiconductor;
shell>
shell> Installing MFS over SD card driver...
SD card installed to a:

shell> play a:\audio48k16S.wav
===== Play music a:\audio48k16S.wav =====
ESAI START!

data = 883542, Time spends on SD reading is 4 sec, 558 millisec
MUSIC DONE!
```

ESAI Record

- Start a terminal application on your PC and set the serial connection for 115200 baud rate, 8 data bits, 1 stop bit, no parity and no flow control.
- Prepare a SD card and insert the card into the SDCARD slot.
- Input the audio data by line-in cable inserted into the P6 in the vybrid_autoevb board.
- Type the “record a:\$FILE_NAME” in the terminal, you would see the printed message as the following.
- Notes: there would be noise in the ESAI output and the length of the record is fixed to 5 seconds. And microphone without amplifier inside is not supported now. If the SD card used is lower than class 4, noise may be heard.

```
shell> ESAI&ASRC card demo
```

```
Shell (build: Oct 30 2013)
Copyright (c) 2013 Freescale Semiconductor;
shell>
shell> Installing MFS over SD card driver...
SD card installed to a:
shell> record a:\test_record.wav
rx test over
```

ESAI-ASRC Playback

- Start a terminal application on your PC and set the serial connection for 115200 baud rate, 8 data bits, 1 stop bit, no parity and no flow control.
- Prepare a SD card with a 44k, 16bit audio file.
- Insert your headphone into the P4 in the vybrid_autoevb board.
- Type the “play_asrc a:\$FILE_NAME” in the terminal, you would see the printed message as the following.

```
shell> ESAI&ASRC card demo

Shell (build: Oct 30 2013)
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shell>
shell> Installing MFS over SD card driver...
SD card installed to a:
shell> play_asrc a:\audio44k16S.wav
===== Play music a:\audio44k16S.wav =====
[source sample rate = 44100]
[target sample rate = 48000]
[slot length = 4]
========================
INSTALL ASRC 0 pair to ESAI
ASRC START!
ESAI START!
ESAI STOP!
ASRC STOP!
MUSIC DONE!
```

Explanation of the example

This example would firstly open the 44.1k wav file and convert the PCM data into 48k by ASRC. And then the converted PCM data would be send into ESAI for 48k playback.