Application Note

FIR_I2S_MASTER

Table of Contents

1. Preface

This application note describes the sample software of FIR_I2S_MASTER using Finite Impulse Response (FIR). This document helps the user check operation of a product under development and develop its program.

2. Technical Term

Term/Abbreviation	Definition
FIR	Finite Impulse Response
I2S	Inter-IC Sound

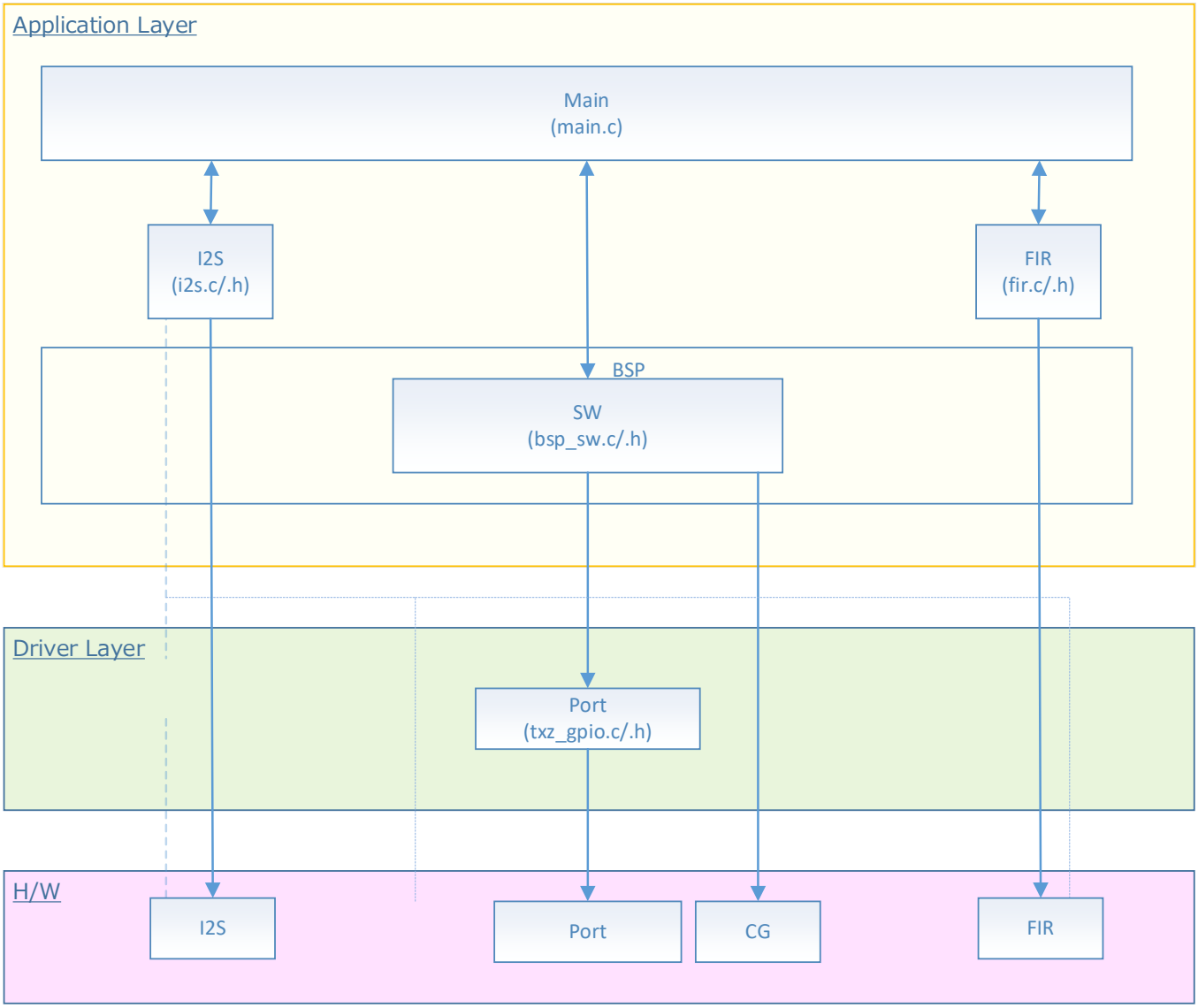
3. Reference Document

Document	Notes
Data sheet	Refer to the data sheet of MCU to be used.
Reference manual	Refer to the reference manual of each IP to be used.
Application note MCU User Guide	Refer to the MCU user manual to be used.

4. Target Sample Program

Sample Program	Outlines
FIR_I2S_MAETER	Sample of FIR function

5. Configuration Diagram



6. Sample Program: FIR_I2S_MASTER

This sample software executes FIR filter function on voice binary data using FIR function.

6.1. Outlines of Operation

1kHz sine wave voice binary data is calculated and stored it to the data table.
The voice binary data is filtered by the FIR filter, and output in the I2S Master mode.
The FIR function is ON and OFF alternately every BSP_PSW_1 push-down. The initial setting after Reset is ON.

Output data
Sampling frequency: 48 kHz
Encoding: 16 bits
Channel: Stereo

6.2. Function to Use

The functions to use are as follows.
For the Port assignment of each channel, refer to the MCU user manual.

IP	Channel	Objective
I2S	BSP_I2C_0	Communication with I2S
PORT	BSP_PSW_1	Switch input

6.3. Interrupt to Use

Interrupt	Outlines
MDMAC Interrupt	MDMAC transfer end interrupt
	MDMAC bus error interrupt
	MDMAC descriptor error interrupt
Timer Interrupt	Interval timer interrupt

6.4. Configuration

Nothing.

6.5. Example of Terminal Emulator Output

Nothing.

7. Revision History

Revision	Date	Description
1.0	2021-10-25	First release

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