DA7218 Ultra Low Power Codec

Introduction

The DA7218 Evaluation Board (233-02) has been designed to allow measurement and evaluation of the DA7218 device.
It connects to the Digital IO Board for USB control and for digital audio input/output via the digital audio interface. All analogue audio codec functionalities are contained within the DA7218 Evaluation Board (EVB). The Digital IO Board user guide accompanies this document.

The EVB is supplied with a USB memory stick containing various documents and a GUI to allow the user to control the DA7218.

The GUI is called SmartCanvas™. It uses a simple graphical interface, allowing the DA7218 to be controlled via a USB port of a PC. The SmartCanvas user guide accompanies this document.

The EVB has a number of jumper links to enable the user to change the system configuration and to allow them to make appropriate measurements, although, in reality, few jumper links are required to be altered for standard operations of the device.
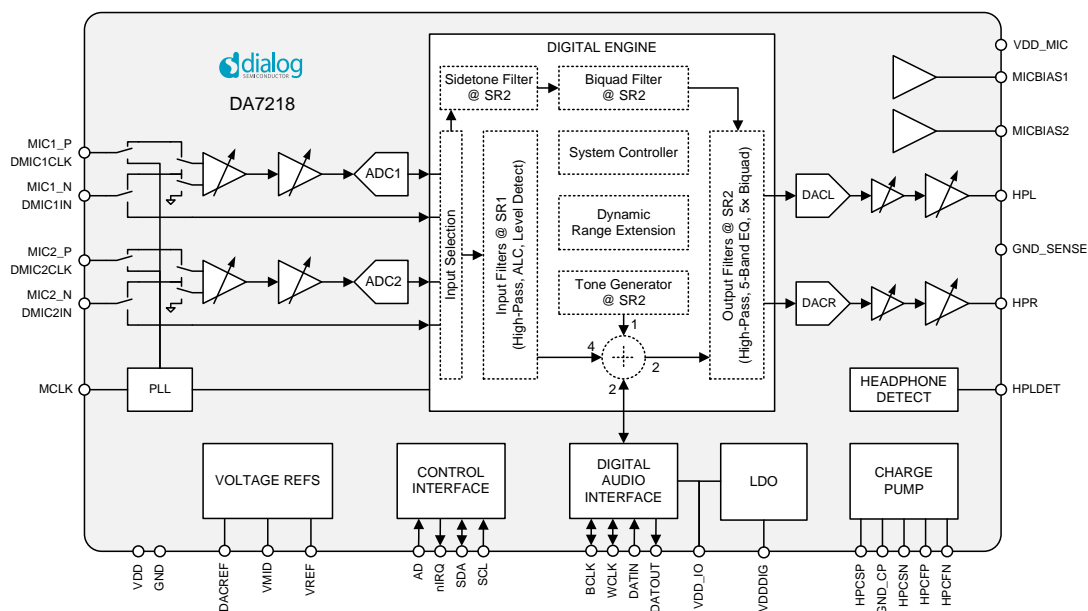

Figure :1 DA7218 Block Diagram

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Summary

This document provides useful information to the user about the EVB to allow testing and evaluation of the DA7218 Ultra Low Power Codec.

The hardware solution is based upon two PCBs:
- "Digital I/O Board"
- "DA7218 Performance Board 233-02-C"

The user guide for the Digital I/O board accompanies this document.

Hardware

The DA7218 Evaluation Board consists of the DA7218 device, the essential external components and analogue interconnects. This board could also be used in standalone or as a module for a customer development platform.
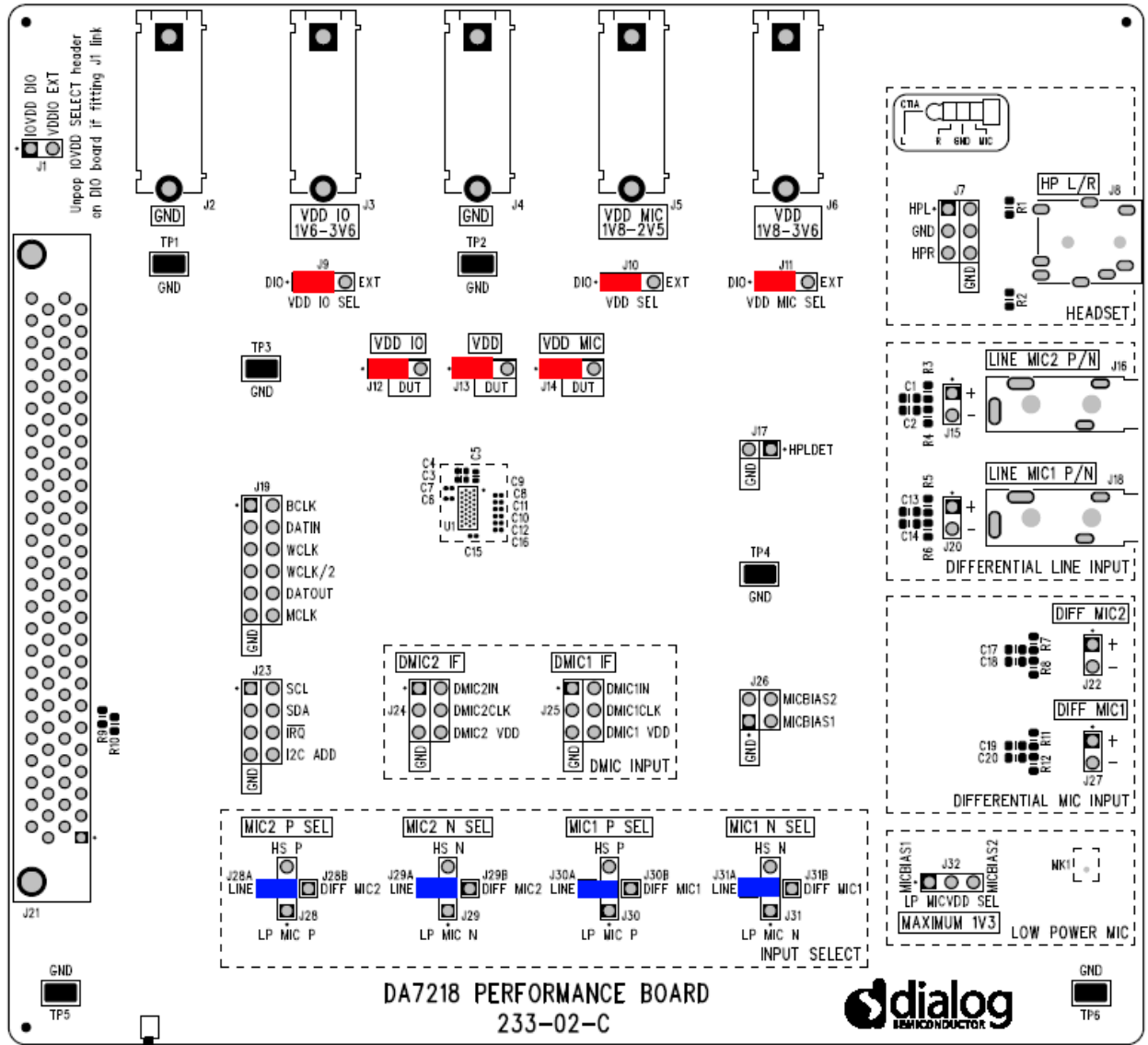

Figure 2: DA7218 – Default Jumper positions shown in Red (power) and Blue (signal)

Note: The EVB has been configured by default to work from the digital I/O board's on-board regulators.

Power Supplies

The DA7218 EVB can be powered from the Digital I/O Board or externally via the provided connectors (J2, J3, J4, J5 and J6).
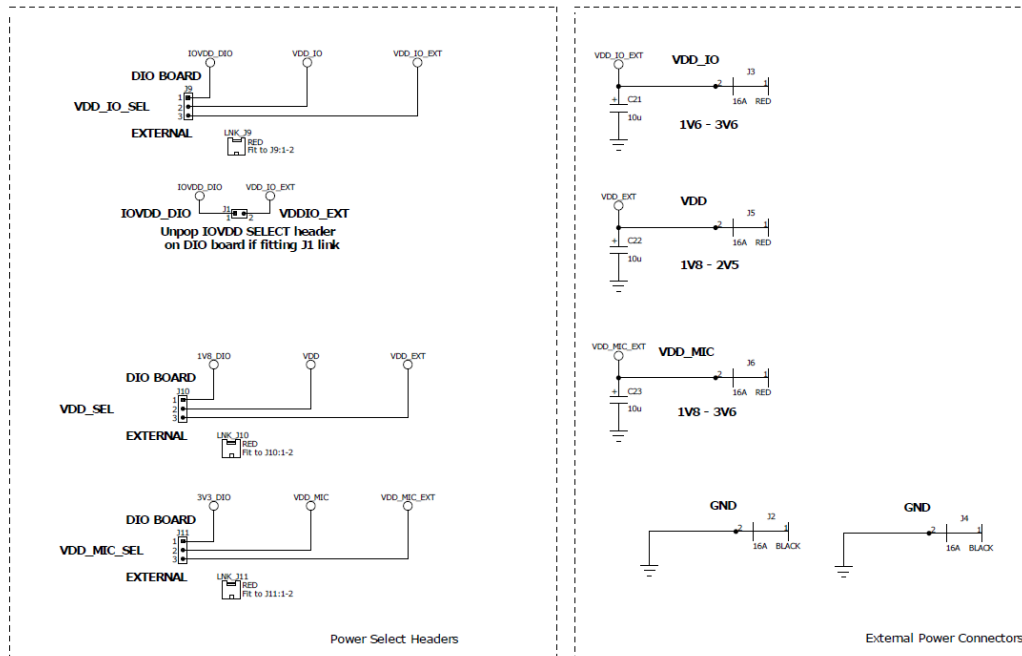

Figure 3 DA7218 EVB Power Connectors

An external current monitor can be placed across each of the supplies by removing the appropriate jumper on J12, J13 and J14 and removing resistors R18, R19 and R20 from the underside of the board.
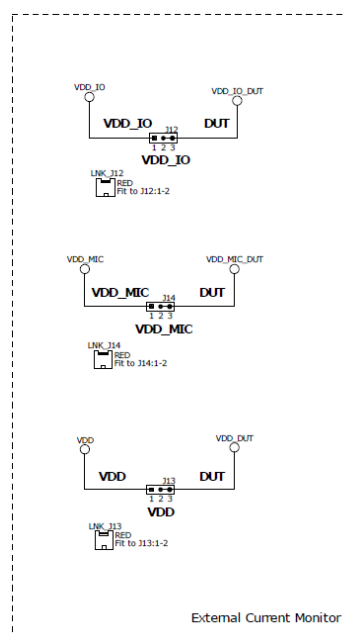

Figure 4 External current monitor connection points

Audio Connections

Connector	Name	Function
J8	Headset Connector	Tip: Headphone Left Ring: Headphone Right Ring2: GND Sleeve: Microphone
J7	HPL, GND, HPR	Headphone outputs.
J16	LINE MIC2 P/N	MIC2 Input (set by J28 and J29)
J18	LINE MIC1 P/N	MIC1 Input (set by J30 and J31)
J22	DIFF MIC2	MIC2 Input (set by J28 and J29)
J27	DIFF MIC1	MIC1 Input (set by J30 and J31)
MK1	Low Power Mic	Invensense low power MEMS microphone. Maximum supply = 1.3V
J31	MIC 1 N SEL	Selects which input is used for MIC 1 N 1-2: Low Power Mic N 2-3: DMIC1 Data 2-A: LINE MIC1 N 2-B: DIFF MIC1 N
J30	MIC 1 P SEL	Selects which input is used for MIC 1 P 1-2: Low Power Mic P 2-3: DMIC1 Clock 2-A: LINE MIC1 P 2-B: DIFF MIC1 P
J29	MIC 2 N SEL	Selects which input is used for MIC 2 N 1-2: Low Power Mic N 2-3: DMIC2 Data 2-A: LINE MIC2 N 2-B: DIFF MIC2 N
J28	MIC 2 P SEL	Selects which input is used for MIC 1 P 1-2: Low Power Mic P 2-3: DMIC2 Clock 2-A: LINE MIC2 P 2-B: DIFF MIC2 P
J26	MICBIAS1 & 2	Access to MICBIAS output
J25	DMIC1 Interface	DMIC1 input pins
J24	DMIC2 Interface	DMIC2 input pins

J19	Digital Audio Interface	Access to DAI pins
J23	Control Interface	Access to the control interface pins (I2C, IRQ).
J17	HPLDET	Test point for HPLDET circuitry.

Table 1 233-02-C Connectors

Jumpers Link Positions

Jumper number	Position	Function
J2 – J6		External supply and GND connections
J9	1-2 (default)	VDD_IO from the Digital I/O board
	2-3	VDD_IO from J3
J10	1-2 (default)	VDD from the Digital I/O board
	2-3	VDD from J5
J11	1-2 (default)	VDD_MIC from the Digital I/O board
	2-3	VDD_MIC from J6
J1	Unpop (default)	Digital I/O board IO supply from Digital I/O board
	1-2	Digital I/O board IO supply from J3
J12	1-2 (default)	VDD_IO supply. Replace jumper with ammeter for current measurement.
	3	VDD_IO voltage monitoring pin
J13	1-2 (default)	VDD supply. Replace jumper with ammeter for current measurement.
	3	VDD voltage monitoring pin
J14	1-2 (default)	VDD_MIC supply. Replace jumper with ammeter for current measurement.
	3	VDD_MIC voltage monitoring pin

J21		Connection to Digital I/O Board

Table 2: 233-02-C Jumpers Link Positions and Button Settings

REVISION HISTORY

REVISION	DATE	ORIGINATOR	CHANGE
1.0	19/05/2015	CM	Initial Release
1.1	02/03/2016	CM	Updated for DIO2

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