



## Example Configurations

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<b>DOC TYPE:</b>	Example Configurations
<b>BOARD REFERENCE:</b>	WM8524-6228-DT16-M
<b>BOARD TYPE:</b>	Customer Mini Board
<b>WOLFSON DEVICE(S):</b>	WM8524
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### INTRODUCTION

The WM8524-6228-DT16-M Customer Mini Board is compatible with the 6228-EV1 customer evaluation board and together these provide a complete hardware platform for evaluation of the WM8524. The WM8524 Customer Mini Board can also be used independently and connected directly to a processor board using flying wires or appropriate headers. This document will cover both, but any performance data will be based on the Wolfson "system" with 6228-EV1 customer main board. Configurations covered are listed below:

- **Default Setting** – USB Power, Electrical S/PDIF Input, I<sup>2</sup>S format
- External Supply, Optical Input, I<sup>2</sup>S format
- External Supply, 24-bit RJ Format

The above configurations do not have mute selected.

This document should be used as a starting point for evaluation of WM8524 but it will not cover every possible configuration.

Assumptions:

1. The user is familiar with the 6228-EV1 customer main board and that the board is configured correctly for the path of interest (see related documents below)

Related documents:

1. WM8524-6228-DT16-M Schematic & Layout
2. 6228-EV1 Schematic & Layout
3. WM8524 Datasheet (latest revision available from [www.wolfsonmicro.com](http://www.wolfsonmicro.com) )

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## BOARD CONFIGURATION STAND-ALONE

The WM8524 Customer Mini Board can be used a stand-alone module for direct connection to a processor board via flying leads or dedicated headers. This section will detail important considerations and provide all information required to do this without risking damage to the device.

### CONNECTION DIAGRAM

Figure 1 below shows the connections required to power-up and control the WM8524 Customer Mini Board.

Please refer to Table 1 for further detail on external I/O connections.

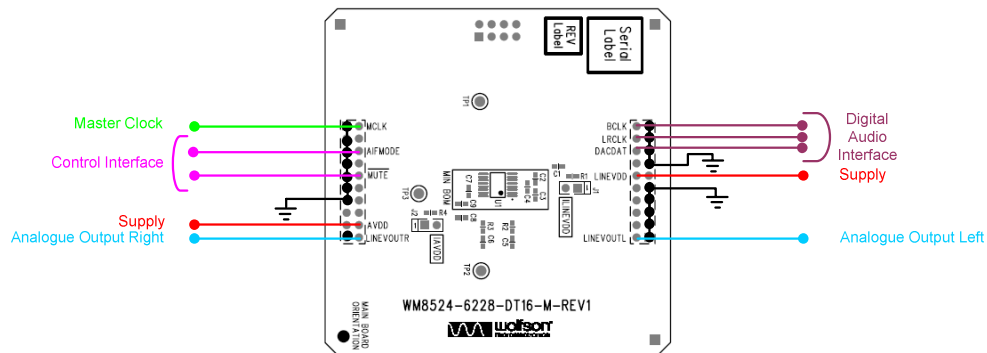


Figure 1 Stand-Alone Board Configuration

## I/O TABLE

SIGNAL	BOARD REFERENCE	IMPORTANT NOTES
<b>Voltage Supplies</b>		
LINEVDD	H2[12]	2.97 – 3.63V
AVDD	H1[18]	2.97 – 3.63V
<b>Ground</b>		
LINEGND		Analogue and digital grounds must always be within 0.3V of each other
AGND		
<b>Control Interface</b>		
AIFMODE	H1[6]	Low (LINEGND) = 24-bit Left Justified High (LINEVDD) = 24-bit I <sup>2</sup> S Unconnected = 24-bit Right Justified
MUTE	H1[10]	Low (LINEGND) = Mute enabled High (LINEVDD) = Mute disabled
<b>Master Clock</b>		
MCLK	H4 [2]	Clock should swing between LINEVDD and LINEGND
<b>Audio Interface</b>		
BCLK	H2 [20]	Audio interface signals should swing between LINEVDD and LINEGND.
LRCLK	H2 [18]	
DACDAT	H2 [16]	
<b>Analogue Outputs</b>		
LINEVOUTL	H2 [2]	Ground referenced line driver output
LINEVOUTR	H1 [20]	Ground referenced line driver output

Table 1 I/O Configuration

## BOARD CONFIGURATION WITH 6228-EV1 CUSTOMER MAIN BOARD

This section focuses on evaluation of the WM8524-6228-DT16-M Customer Mini Board in combination with the 6228-EV1 customer main board. This “system” is the reference platform for any measurement data contained in this document. Please note that only a limited number of usage modes will be covered. The WM8524 is a Hardware only device and is only configurable in Slave Mode.

### DEFAULT SETTING - USB POWER, ELECTRICAL S/PDIF INPUT, I<sup>2</sup>S FORMAT

#### BOARD CONFIGURATION

The customer test system as shown in Figure 2 below is configured to derive supply for the WM8524 from the USB supply. Alternatively an external supply values can be applied via 4mm sockets (J1-J2) and moving the jumper link on J3 from pins 2-3 to 1-2. Please note that the board requires a +5V supply for normal operation.

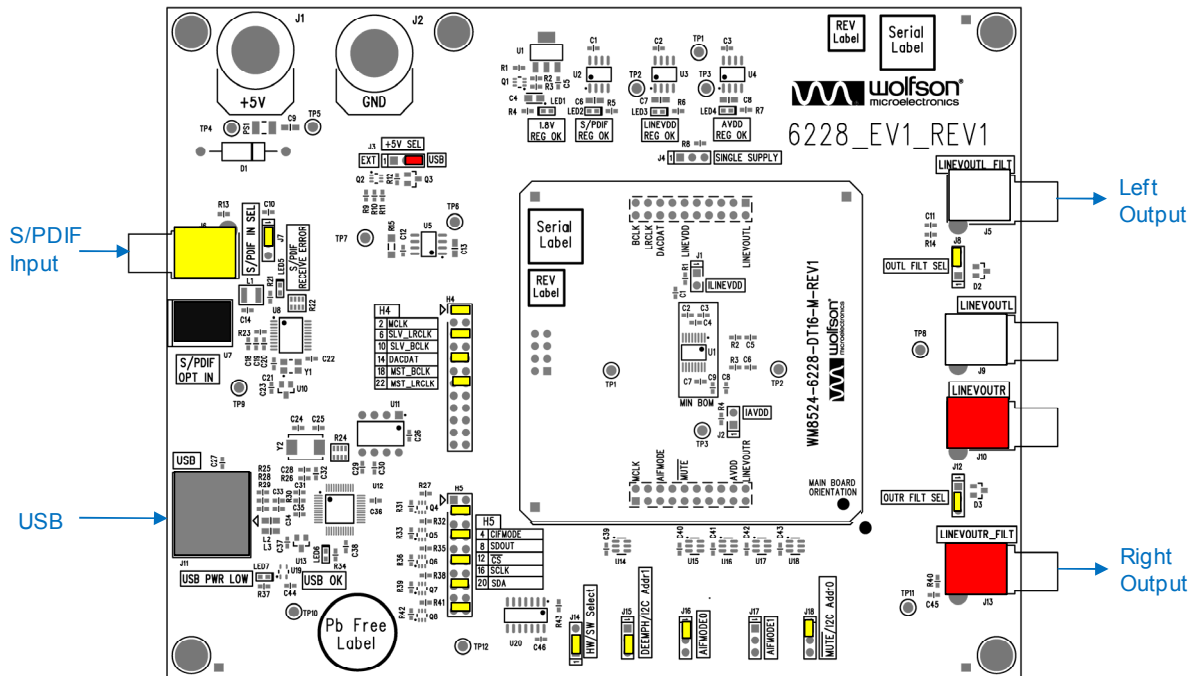


Figure 2 USB power, electrical S/PDIF input, filtered outputs

EXTERNAL SUPPLY WITH OPTICAL INPUT, I<sup>2</sup>S FORMAT

BOARD CONFIGURATION

The customer test system as shown in Figure 3 below is configured to derive the supply for the WM8524 from an external +5V power supply. This configuration also shows the WM8524 taking an optical S/PDIF input, using I<sup>2</sup>S formatting and the analogue outputs are not filtered using the on-board passive low pass filter.

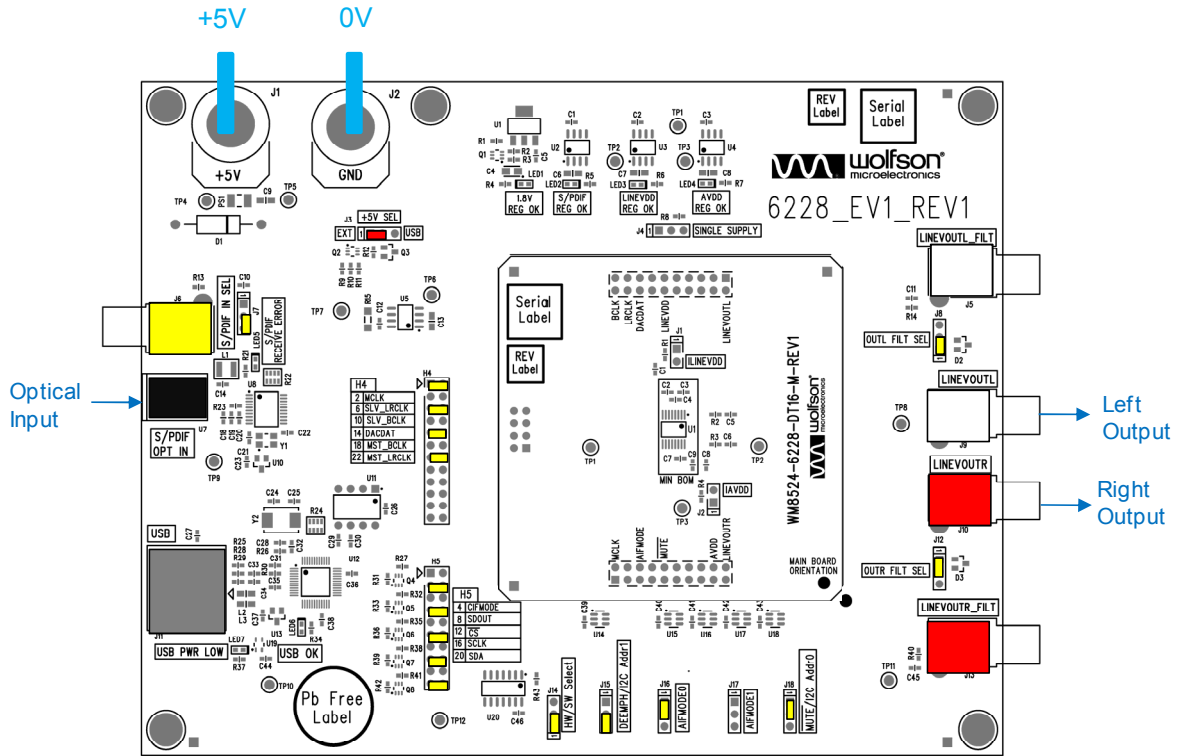


Figure 3 External power, optical S/PDIF input, unfiltered outputs

**EXTERNAL SUPPLY, 24-BIT RJ FORMAT**

**BOARD CONFIGURATION**

The customer test system as shown in Figure 4 below is configured to derive supply for the WM8524 from an external +5V supply and uses 24-bit RJ formatting with the analogue outputs being passed through the on-board passive low pass filter.

**Note:** AIFMODE is a tri-state pin and J16 must be left unconnected to leave AIFMODE floating to enable the 'Z' state to be selected in order to use the 24-bit RJ format.

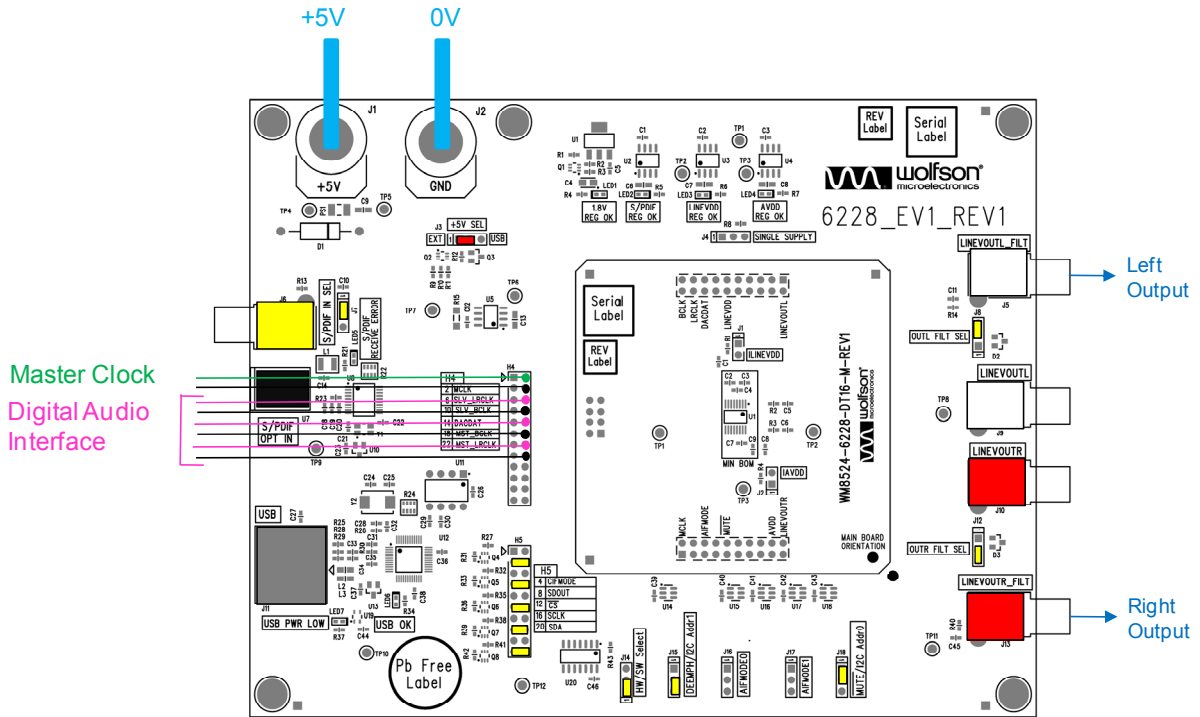


Figure 4 External power, optical S/PDIF input, unfiltered outputs

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Additional information may be made available on our web site at:

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