Example Configurations

<table>
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<th>DOC TYPE:</th>
<th>EXAMPLE CONFIGURATIONS</th>
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<tbody>
<tr>
<td>BOARD REFERENCE:</td>
<td>WM8741-6060-DS28-EV2-REV1</td>
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<tr>
<td>BOARD TYPE:</td>
<td>Customer Standalone Board</td>
</tr>
<tr>
<td>WOLFSON DEVICE(S):</td>
<td>WM8741</td>
</tr>
<tr>
<td>DATE:</td>
<td>November 2008</td>
</tr>
<tr>
<td>DOC REVISION:</td>
<td>Rev 1.0</td>
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INTRODUCTION

The WM8741-6060-DS28-EV2-REV1 Customer Standalone Board is a complete hardware platform for evaluation of the WM8741 High Performance DAC. The WM8741 Customer Standalone Board can also be used independently and connected directly to a processor board using flying wires or appropriate headers. Configurations covered are listed below:

- 3-wire Software Control – Stereo 24-bit I2S using Electrical S/PDIF Input
- 2-wire Software Control – Mono 24-bit I2S using Optical S/PDIF Input
- 3-wire Software Control – Stereo DSD Direct using External DSP Connections
- 3-wire Software Control – Stereo DSD Plus using External DSP Connections
- Hardware Control – Stereo 24-bit I2S using Electrical S/PDIF Input
- Hardware Control – Stereo 24-bit RJ using External DSP Connections

This document should be used as a starting point for evaluation of WM8741 but it will not cover every possible configuration.

Assumptions:

1. The user is familiar with the WM8741 datasheet
2. If software mode is to be used, the user has setup the control software (WISCE) and is able to control the DUT

Related documents:

1. WM8741-6060-DS28-EV2-REV1 Schematic and Layout
2. WISCE Quick Start Guide
3. WM8741 Datasheet

All documents available at www.wolfsonmicro.com
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BOARD CONFIGURATION

This section focuses on evaluation of the WM8741-6060-DS28-EV2-REV1 Customer Standalone Board. Please note that only a limited number of usage modes will be covered.

3-WIRE SOFTWARE CONTROL – STEREO 24-BIT I2S

The following section details board configuration for 3-wire software control, stereo 24-bit I2S using the electrical S/PDIF input connector.

BLOCK DIAGRAM
REGISTER SETTINGS

Register settings provided below are simply the minimum requirement to configure the desired path and have not in any way been optimised.

<table>
<thead>
<tr>
<th>REG INDEX</th>
<th>DATA VALUE</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0x000</td>
<td>Software reset.</td>
</tr>
</tbody>
</table>

The default register settings are suitable.
2-WIRE SOFTWARE CONTROL – MONO 24-BIT I2S

The following section details board configuration for 2-wire software control, mono 24-bit I2S using the optical S/PDIF input connector.

**BLOCK DIAGRAM**

**BOARD CONFIGURATION**
REGISTER SETTINGS

Register settings provided below are simply the minimum requirement to configure the desired path and have not in any way been optimised. Note that the write made to R8 will depend on whether you require to setup mono left or mono right mode.

<table>
<thead>
<tr>
<th>REG INDEX</th>
<th>DATA VALUE</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0x000</td>
<td>Software reset</td>
</tr>
<tr>
<td>8</td>
<td>0x006</td>
<td>Mono left</td>
</tr>
<tr>
<td></td>
<td>0x00E</td>
<td>Mono right</td>
</tr>
</tbody>
</table>

OR
3-WIRE SOFTWARE CONTROL – STEREO DSD DIRECT

The following section details board configuration for 3-wire software control, stereo DSD Direct mode using external DSP connections for the DSD clock and data.

**BLOCK DIAGRAM**

**BOARD CONFIGURATION**

![BLOCK DIAGRAM Image]

![BOARD CONFIGURATION Image]
REGISTER SETTINGS

Register settings provided below are simply the minimum requirement to configure the desired path and have not in any way been optimised.

<table>
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<tr>
<th>REG INDEX</th>
<th>DATA VALUE</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0x000</td>
<td>Software reset</td>
</tr>
<tr>
<td>7</td>
<td>0x001</td>
<td>DSD Direct mode</td>
</tr>
</tbody>
</table>
3-WIRE SOFTWARE CONTROL – STEREO DSD PLUS

The following section details board configuration for 3-wire software control, stereo DSD Plus mode using external DSP connections for the DSD clock and data.

**BLOCK DIAGRAM**

**BOARD CONFIGURATION**
REGISTER SETTINGS

Register settings provided below are simply the minimum requirement to configure the desired path and have not in any way been optimised.

<table>
<thead>
<tr>
<th>REG INDEX</th>
<th>DATA VALUE</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>0x000</td>
<td>Software reset</td>
</tr>
<tr>
<td>7</td>
<td>0x002</td>
<td>DSD Plus mode</td>
</tr>
</tbody>
</table>
HARDWARE CONTROL – STEREO 24-BIT I2S

The following section details board configuration for hardware control, stereo 24-bit I2S using the electrical S/PDIF input connector.

**BLOCK DIAGRAM**

**BOARD CONFIGURATION**
HARDWARE CONTROL – STEREO 24-BIT RJ

The following section details board configuration for hardware control, stereo 24-bit RJ using external DSP connections for the audio interface clocks and data.

**BLOCK DIAGRAM**

![Block Diagram Image]

**BOARD CONFIGURATION**

![Board Configuration Image]
APPLICATION SUPPORT

If you require more information or require technical support, please contact the Wolfson Microelectronics Applications group through the following channels:

Email: apps@wolfsonmicro.com
Telephone Apps: +44 (0) 131 272 7070
Fax: +44 (0) 131 272 7001
Mail: Applications Engineering at the address on the last page

or contact your local Wolfson representative.

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

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ADDRESS:

Wolfson Microelectronics plc
Westfield House
26 Westfield Road
Edinburgh
EH11 2QB
United Kingdom

Tel :: +44 (0)131 272 7000
Fax :: +44 (0)131 272 7001
E-mail :: apps@wolfsonmicro.com