

Recommended EQ Settings for Wolfson Audio CODECs

INTRODUCTION

Many of Wolfson's audio CODECs include a high quality EQ and 3D circuit to allow the user to tailor the sound to their listening tastes. This document describes how the Bass, Treble and 3D filters can be set up to create preset EQ options like Rock, Pop etc.

The settings described below are based on commonly used standards and listening tests carried out by Wolfson. These levels were chosen to offer a good 'musical' balance for different types of recording but are obviously subjective. They can, of course, be changed to suit the taste of the user.

PARAMETERS OF INTEREST

The settings that can be altered on existing CODECs (WM8750/53, WM9711/12/13/14) are Bass, Treble and 3D. Within these settings, different cut-off frequencies and gain levels can be selected. By using these parameters, the following presets can be achieved.

RECOMMENDED PRESETS

The settings described below are optimised for 44.1KHz/48KHz sample rate operation.

DEFAULT/FLAT

This setting simply leaves all EQ set to default level (0dB) and plays the music exactly as recorded.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Linear	Bypass	8KHz	Bypass	200Hz	2.2KHz	Disabled

ROCK

This setting increases perceived bass by using the adaptive bass function. It also boosts treble slightly and adds a small amount of 3D enhancement.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Adapt	11	8KHz	+1.5dB	200Hz	2.2KHz	33%

POP

This setting increases mid-band levels and adds 3D enhancement

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Linear	-3dB	8KHz	+1.5dB	200Hz	2.2KHz	46%

JAZZ

This setting amplifies bass and mid bass using the linear bass control at 200Hz and also adds a significant boost to treble and high mid frequencies. 3D is also added with a low cut-off at 500Hz.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	200Hz	Linear	+6dB	4KHz	+4.5dB	500Hz	2.2KHz	33%

CLASSICAL

This setting amplifies treble to enhance detail with a small amount of 3D effect also added.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Linear	Bypass	8KHz	+7.5dB	200Hz	2.2KHz	20%

DANCE

This setting adds a large amount of additional bass and treble with a lot of 3D effect to give a 'live' sound.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Adapt	14	8KHz	6dB	500Hz	2.2KHz	80%

HEAVY

This setting amplifies bass and treble significantly.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Linear	+6dB	8KHz	+6dB	200Hz	2.2KHz	Disabled

DISCO

This setting amplifies bass and mid bass using the adaptive bass control at 200Hz and also adds a significant boost to treble frequencies

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	200Hz	Adapt	11	8KHz	+4.5dB	200Hz	2.2KHz	Disabled

SOFT

This setting reduces treble content and adds warmth to bass and low-mid frequencies

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	200Hz	Adapt	11	4KHz	-4.5dB	200Hz	2.2KHz	Disabled

3D STEREO/LIVE

This setting simply amplifies the stereo image. Very effective for acoustic music

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Linear	Bypass	8KHz	Bypass	200Hz	2.2KHz	73%

HALL

This setting amplifies treble and bass to enhance detail and presence with a large amount of 3D effect to 'open out' the sound and amplify any reverb in the recording.

Parameter	Bass			Treble		3D		
	Cut-off	Type	Level	Cut-off	Level	Cut-off Low	Cut-off High	Level
Value	130Hz	Linear	+4.5dB	8KHz	+7.5dB	200Hz	2.2KHz	76%

APPLICATION SUPPORT

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

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

or contact your local Wolfson sales office or representative.

Additional information may be made available from time to time on our web site at <http://www.wolfsonmicro.com>

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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

Email :: apps@wolfsonmicro.com