
Microphone array board support library

Library for controlling the XMOS microphone array ref design 1v0.

Features

The microphone array board support library has the following features:

- button and led interface

Typical Resource Usage

This following table shows typical resource usage in some different configurations. Exact resource usage will depend on the particular use of the library by the application.

Configuration	Pins	Ports	Clocks	Ram	Logical cores
Default	13	3 (1-bit), 1 (4-bit), 2 (8-bit)	0	~1.3K	1

Software version and dependencies

This document pertains to version 1.0.0 of this library. It is known to work on version 14.1.1 of the xTIMEcomposer tools suite, it may work on other versions.

The library does not have any dependencies (i.e. it does not rely on any other libraries).

Related application notes

None available.

1 Scope of library

This library provides an interface for interacting with the buttons and leds on the XMOS microphone array reference design 1v0.

2 Intended use

The board support interface can be accessed via the `mic_array_board_support.h` header:

```
#include "mic_array_board_support.h"
```

You also have to add `mic_array_board_support` to the `USED_MODULES` field of your application Makefile.

3 API

3.1 Supporting types

Type	e_button_state
Description	This type is used to describe an event on a button.
Values	BUTTON_PRESSED Button is depressed. BUTTON_RELEASED Button is released.

Type	p_leds
Description	Structure to describe the LED ports.
Fields	out port p_led0to7 LED 0 to 7. out port p_led8 LED 8. out port p_led9 LED 9. out port p_led10to12 LED 10 to 12. out port p_leds_oen LED Output enable (active low).

Type	led_button_if
Description	This interface is used to set the brightness of the LEDs and create events on button presses.

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Function	button_and_led_server
Description	
Type	<pre>void button_and_led_server(server interface led_button_if lb[n_lb], static const unsigned n_lb, p_leds &leds, in port p_buttons)</pre>

4 Known Issues

No known issues.

5 Microphone array board support library change log

5.1 1.0.0

- Update to button/LED server to support multiple clients
- Outer LED ring interface call added

5.2 0.2.2

- Update to source code license and copyright

5.3 0.2.1

- Added MCLK presence and rate detection to 1v0 hardware test

5.4 0.2.0

- Updated documentation

5.5 0.1.0

- Initial Release