

Arduino Gyroscope Driver

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1 Class Index

1.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Bcm2835	2
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2 File Index

2.1 File List

Here is a list of all files with brief descriptions:

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3 Class Documentation

3.1 Bcm2835 Class Reference

```
#include <Bcm2835.h>
```

Classes

- struct [Peripheral](#)

Static Public Member Functions

- static int [mapPeripheral](#) ([Peripheral](#) *peripheral)
- static void [unmapPeripheral](#) ([Peripheral](#) *peripheral)

3.1.1 Detailed Description

Definition at line 15 of file [Bcm2835.h](#).

3.1.2 Member Function Documentation

3.1.2.1 int [Bcm2835::mapPeripheral](#) ([Peripheral](#) * *peripheral*) [static]

Definition at line 19 of file [Bcm2835.cpp](#).

3.1.2.2 void [Bcm2835::unmapPeripheral](#) ([Peripheral](#) * *peripheral*) [static]

Definition at line 42 of file [Bcm2835.cpp](#).

The documentation for this class was generated from the following files:

- [Bcm2835.h](#)
- [Bcm2835.cpp](#)

3.2 Bcm2835::Peripheral Struct Reference

```
#include <Bcm2835.h>
```

Public Attributes

- int [fd](#)
- void * [map](#)
- unsigned int [address](#)
- volatile unsigned int * [mem](#)

3.2.1 Detailed Description

Definition at line 20 of file [Bcm2835.h](#).

3.2.2 Member Data Documentation

3.2.2.1 unsigned int Bcm2835::Peripheral::address

Address in physical map that we want this memory block to expose.

Definition at line 35 of file [Bcm2835.h](#).

3.2.2.2 int Bcm2835::Peripheral::fd

Memory file descriptor.

Definition at line 25 of file [Bcm2835.h](#).

3.2.2.3 void* Bcm2835::Peripheral::map

Maped memory pointer.

Definition at line 30 of file [Bcm2835.h](#).

3.2.2.4 volatile unsigned int* Bcm2835::Peripheral::mem

Mapped address.

Definition at line 40 of file [Bcm2835.h](#).

The documentation for this struct was generated from the following file:

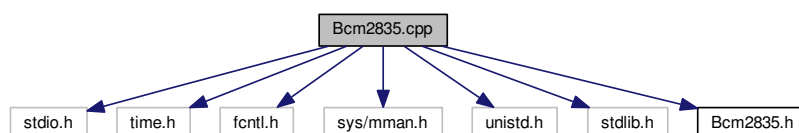
- [Bcm2835.h](#)

4 File Documentation

4.1 Bcm2835.cpp File Reference

```
#include <stdio.h>
#include <time.h>
#include <fcntl.h>
#include <sys/mman.h>
#include <unistd.h>
#include <stdlib.h>
#include "Bcm2835.h"
```

Include dependency graph for Bcm2835.cpp:



Macros

- `#define __RASPBERRY_BCM2835_CPP__ 1`

4.1.1 Macro Definition Documentation

4.1.1.1 #define __RASPBERRY_BCM2835_CPP__ 1

Bcm2835.c.

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Definition at line 8 of file [Bcm2835.cpp](#).

4.2 Bcm2835.cpp

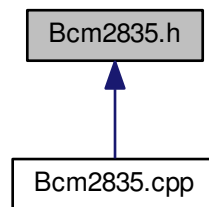
```

00001
00007 #ifndef __RASPBERRY_BCM2835_CPP__
00008 #define __RASPBERRY_BCM2835_CPP__ 1
00009
00010 #include <stdio.h>
00011 #include <time.h>
00012 #include <fcntl.h>
00013 #include <sys/mman.h>
00014 #include <unistd.h>
00015 #include <stdlib.h>
00016
00017 #include "Bcm2835.h"
00018
00019 int Bcm2835::mapPeripheral(Peripheral *peripheral) {
00020
00021     if ((peripheral->fd = open("/dev/mem", O_RDWR|O_SYNC) ) < 0) {
00022         perror("Bcm2835#mapPeripheral: Failed to open /dev/mem, try checking permissions.\n");
00023         exit(1);
00024     }
00025
00026     peripheral->map = mmap(
00027         NULL,
00028         BLOCK_SIZE,
00029         PROT_READ | PROT_WRITE,
00030         MAP_SHARED,
00031         peripheral->fd,
00032         (unsigned long) IOBASE + peripheral->address
00033     );
00034     if (peripheral->map == MAP_FAILED) {
00035         perror("Bcm2835#mapPeripheral: Cannot map.");
00036         exit(1);
00037     }
00038     peripheral->mem = (volatile unsigned int *)peripheral->map;
00039     return 0;
00040 }
00041
00042 void Bcm2835::unmapPeripheral(Peripheral *peripheral) {
00043     munmap(peripheral->map, BLOCK_SIZE);
00044     close(peripheral->fd);
00045 }
00046
00047 #endif /* __RASPBERRY_BCM2835_CPP__ */

```

4.3 Bcm2835.h File Reference

This graph shows which files directly or indirectly include this file:



Classes

- class [Bcm2835](#)
- struct [Bcm2835::Peripheral](#)

Macros

- `#define` [IOBASE](#) 0x20000000
- `#define` [PAGESIZE](#) 4096
- `#define` [BLOCK_SIZE](#) 4096

4.3.1 Macro Definition Documentation

4.3.1.1 `#define` [BLOCK_SIZE](#) 4096

Definition at line 13 of file [Bcm2835.h](#).

4.3.1.2 `#define` [IOBASE](#) 0x20000000

[Bcm2835.h](#).

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Definition at line 10 of file [Bcm2835.h](#).

4.3.1.3 `#define` [PAGESIZE](#) 4096

Definition at line 12 of file [Bcm2835.h](#).

4.4 Bcm2835.h

```
00001
00007 #ifndef __RASPBERRY_BCM2835_H__
00008 #define __RASPBERRY_BCM2835_H__ 1
00009
00010 #define IOBASE          0x20000000
00011
```

```
00012 #define PAGESIZE      4096
00013 #define BLOCK_SIZE      4096
00014
00015 class Bcm2835 {
00016
00017 public:
00018
00019     struct Peripheral {
00020
00021         int fd;
00025
00026         void *map;
00030
00031         unsigned int address;
00035
00036         volatile unsigned int *mem;
00040
00041     };
00042
00043     static int mapPeripheral(Peripheral *peripheral);
00044
00045     static void unmapPeripheral(Peripheral *peripheral);
00046 };
00047
00048 #endif /* __RASPBERRY_BCM2835_H__ */
```

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