ZEncoder Library

Generated by Doxygen 1.8.14

Contents

1 ZSwitchs

Arduino Lib for buttons and switches with ros.

The main advantage is to manage up to 32 button on 1 ros message uint_32.

This basic code is :

ZSwitchs switches; void setup() { switches.setup(&nh,"/r1/pilo/switches"); switches.attach(P_ANA1.Pin.IO0);// attach the pin to bit 0 switches.attach(P_ANA1.Pin.IO1);// attach the pin to bit 1 //... up to 32 pin befor to instanciate an other class. switches.setRefreshRateUs(1000);// refresh each milli second }

void loop() { switches.loop();//publish topic if needed

}

on ros you can do roscore & rosrun rosserial_python serial_node.py /dev/ttyS4 rostopic info "/r1/pilo/switches" rostopic echo "/r1/pilo/switches" rostopic hz rostopic info "/r1/pilo/switches"

so you get a message at refresh rate, and on edge. see refman.pdf for advance doc.

2 Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

3 File Index

3.1 File List

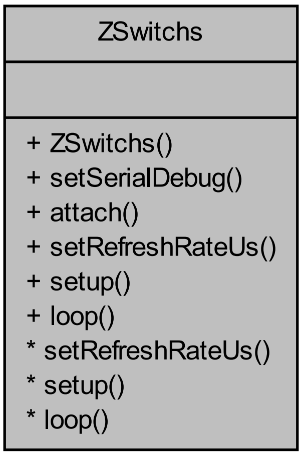
Here is a list of all files with brief descriptions:

4 Data Structure Documentation

4.1 ZSwitchs Class Reference

```
#include <ZSwitchs.h>
```

Collaboration diagram for ZSwitchs:



Public Member Functions

- ZSwitchs ()
- void setSerialDebug (HardwareSerial ∗SerialDebug)
- int attach (uint32_t buttonPin)

- void setRefreshRateUs (uint32_t intervalTime)

ROS IPA

- void setup (ros::NodeHandle ∗myNodeHandle, const char ∗topic)
- void loop ()

4.1.1 Detailed Description

Definition at line 24 of file ZSwitchs.h.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 ZSwitchs()

```
ZSwitchs::ZSwitchs ( )
```

constructor

create the object. The default refresh rate 10 hz. you have to call setup() once to use it.

Definition at line 23 of file ZSwitchs.cpp.

4.1.3 Member Function Documentation

4.1.3.1 attach()

```
int ZSwitchs::attach (
             uint32_t buttonPin )
```

4.1.3.2 loop()

```
void ZSwitchs::loop ( )
```

function to be called in your main loop.

4.1.3.3 setRefreshRateUs()

```
void ZSwitchs::setRefreshRateUs (
             uint32_t intervalTime )
```

setup the refresh rate of the topic speed

Parameters

intervalTime	duration between 2 topic in Micro Seconde

4.1.3.4 setSerialDebug()

```
void ZSwitchs::setSerialDebug (
            HardwareSerial * mySerialDebug )
```

setup a debug channel to have output on serial the drawback it that it waste cpu cycle, and you an lost some tick but usefull for debug.

setup a serial channel to output some debug stuff.

Definition at line 41 of file ZSwitchs.cpp.

4.1.3.5 setup()

```
void ZSwitchs::setup (
            ros::NodeHandle * myNodeHandle,
            const char * topic )
```

the ros initialisation

Parameters

myNodeHandle	the ROS node handler
topic	the topic for position displayed in ROS

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

- ZSwitchs.h
- ZSwitchs.cpp

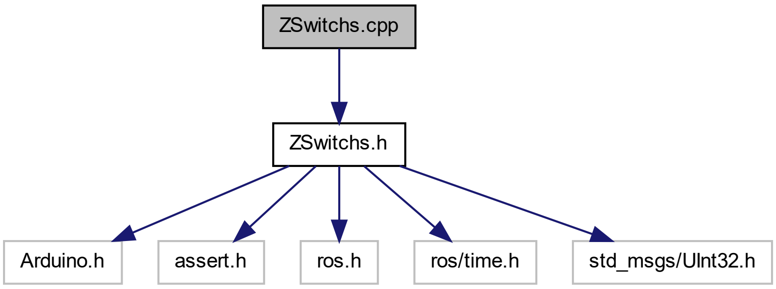
5 File Documentation

5.1 README.md File Reference

5.2 ZSwitchs.cpp File Reference

```
#include <ZSwitchs.h>
```

Include dependency graph for ZSwitchs.cpp:



Macros

- #define DEBUG(a) {}

5.2.1 Detailed Description

This class is use to create ros topic that monitor button/switches.

This library is mainly agnostic regarding arduino architecture it should work on all. if HardwareSerial class is missing, create HardwareSerial that extend the Serial class. the following define must exist ROS_USED.

5.2.2 Macro Definition Documentation

5.2.2.1 DEBUG

```
#define DEBUG(
              a ) {}
```

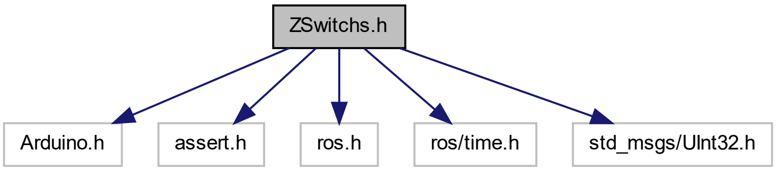
define to manage debug of lib

Definition at line 14 of file ZSwitchs.cpp.

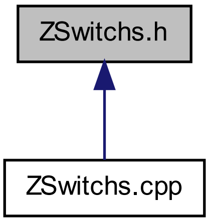
5.3 ZSwitchs.h File Reference

```
#include <Arduino.h>
#include <assert.h>
#include <ros.h>
#include <ros/time.h>
#include <std_msgs/UInt32.h>
```

Include dependency graph for ZSwitchs.h:



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



Data Structures

- class ZSwitchs

Macros

- #define ROS_USED 1

5.3.1 Detailed Description

An library that manage switches(up to 32 by object/topic) and generate a ros topic std_msgs/UInt32.

5.3.2 Macro Definition Documentation

5.3.2.1 ROS_USED

```
#define ROS_USED 1
```

Definition at line 12 of file ZSwitchs.h.

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