Arduino Signal Filtering Library

Generated by Doxygen 1.8.1.2

Fri Nov 30 2012 01:07:02

Contents

Chapter 1

Class Index

1.1 Class List

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

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

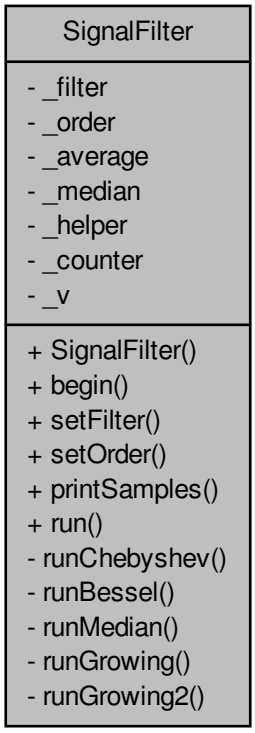
Chapter 3

Class Documentation

3.1 SignalFilter Class Reference

`#include <SignalFilter.h>`

Collaboration diagram for SignalFilter:



Public Member Functions

- SignalFilter ()

  Constructor.

- void begin ()

  Begin function: set default filter options.
- void setFilter (char filter)

  setFilter(char filter): Select filter: 'c' -> Chebyshev, 'b' -> Bessel
- void setOrder (int order)

  selectOrder(int order): Select filter order (1 or 2)
- void printSamples ()

  printSamples: Print out some samples (for debugging)
- int run (int data)

  run: calls the actual filter: input=rawdata, output=filtered data

Private Member Functions

- int runChebyshev (int data)

  runChebyshev: Runs the actual filter: input=rawdata, output=filtered data
- int runBessel (int data)

  runBessel: Runs the actual filter: input=rawdata, output=filtered data
- int runMedian (int data)

  runBessel: Runs the actual filter: input=rawdata, output=filtered data
- int runGrowing (int data)

  runGrowing: Runs the actual filter: input=rawdata, output=filtered data: Growing-shrinking filter (fast)
- int runGrowing2 (int data)

  runGrowing2: Runs the actual filter: input=rawdata, output=filtered data: Growing-shrinking filter (smoother)

Private Attributes

- char _filter
- int _order
- int _average
- int _median
- int _helper
- int _counter
- int _v [3]

3.1.1 Constructor & Destructor Documentation

3.1.1.1 SignalFilter::SignalFilter ( )

Constructor.

SignalFilter - Library to Filter Sensor Data using digital filters Available filters: Chebyshev & Bessel low pass filter (1st & 2nd order)

References _average, _counter, _filter, _helper, _median, _order, and _v.

3.1.2 Member Function Documentation

3.1.2.1 void SignalFilter::begin ( )

Begin function: set default filter options.

References setFilter(), and setOrder().

3.1.2.2 void SignalFilter::printSamples ( )

printSamples: Print out some samples (for debugging)

References _v.

3.1.2.3 int SignalFilter::run (int *data*)

run: calls the actual filter: input=rawdata, output=filtered data

References _filter, runBessel(), runChebyshev(), runGrowing(), runGrowing2(), and runMedian().

3.1.2.4 int SignalFilter::runBessel (int *data*) [private]

runBessel: Runs the actual filter: input=rawdata, output=filtered data

References _order, and _v.

Referenced by run().

3.1.2.5 int SignalFilter::runChebyshev (int *data*) [private]

runChebyshev: Runs the actual filter: input=rawdata, output=filtered data

References _order, and _v.

Referenced by run().

3.1.2.6 int SignalFilter::runGrowing (int *data*) [private]

runGrowing: Runs the actual filter: input=rawdata, output=filtered data: Growing-shrinking filter (fast)

References _helper.

Referenced by run().

3.1.2.7 int SignalFilter::runGrowing2 (int *data*) [private]

runGrowing2: Runs the actual filter: input=rawdata, output=filtered data: Growing-shrinking filter (smoother)

References _counter, and _helper.

Referenced by run().

3.1.2.8 int SignalFilter::runMedian (int *data*) [private]

runBessel: Runs the actual filter: input=rawdata, output=filtered data

References _median, and _v.

Referenced by run().

3.1.2.9 void SignalFilter::setFilter (char *filter*)

setFilter(char filter): Select filter: 'c' -> Chebyshev, 'b' -> Bessel

References _filter.

Referenced by begin().

3.1.2.10 void SignalFilter::setOrder (int *order*)

selectOrder(int order): Select filter order (1 or 2)

References _order.

Referenced by begin().

3.1.3 Member Data Documentation

3.1.3.1 int SignalFilter::_average [private]

Referenced by SignalFilter().

3.1.3.2 int SignalFilter::_counter [private]

Referenced by runGrowing2(), and SignalFilter().

3.1.3.3 char SignalFilter::_filter [private]

Referenced by run(), setFilter(), and SignalFilter().

3.1.3.4 int SignalFilter::_helper [private]

Referenced by runGrowing(), runGrowing2(), and SignalFilter().

3.1.3.5 int SignalFilter::_median [private]

Referenced by runMedian(), and SignalFilter().

3.1.3.6 int SignalFilter::_order [private]

Referenced by runBessel(), runChebyshev(), setOrder(), and SignalFilter().

3.1.3.7 int SignalFilter::_v[3] [private]

Referenced by printSamples(), runBessel(), runChebyshev(), runMedian(), and SignalFilter().

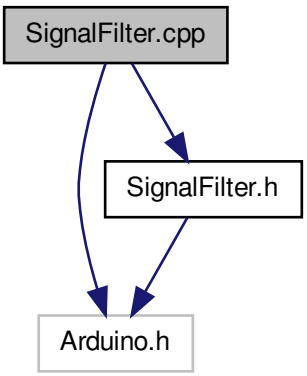
Chapter 4

File Documentation

4.1 SignalFilter.cpp File Reference

```
#include <Arduino.h>
#include <SignalFilter.h>
```

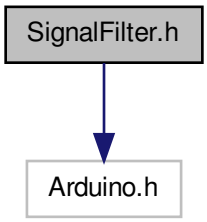
Include dependency graph for SignalFilter.cpp:



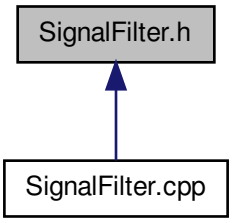
4.2 SignalFilter.h File Reference

```
#include <Arduino.h>
```

Include dependency graph for SignalFilter.h:



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



Classes

- class SignalFilter

Index