I2C_Software Reference Manual

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Chapter 1

I2C_Software

Software I2C for MSP430

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Developed with embedXcode

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Date

mars 29, 2013 13:44

Version

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See Also

- ReadMe.txt for references
- TwoWire.h - TWI/I2C library for Arduino & Wiring
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- Arduino core files for MSP430
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- RobG - Posted 13 March 2011 - 12:10 AM
  http://forum.43oh.com/topic/441-serial-eeprom/?p=3876
- calinp - Posted 21 February 2013 - 11:29 PM
  http://forum.43oh.com/topic/3201-software-bit-bang-i2c-library-for-energia/?p=300

Chapter 2

Class Index

2.1 Class List

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

SoftwareWire
Software I2C master class 7

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

I2C_Software.ino
Main sketch 11
SoftwareWire.h
Software I2C for MSP430 13

Chapter 4

Class Documentation

4.1 SoftwareWire Class Reference

Software I2C master class.

`#include <SoftwareWire.h>`

Public Member Functions

- SoftwareWire (uint8_t pinSDA, uint8_t pinSCL)

  Constructor.
- void begin ()

  Initialisation.
- void beginTransmission (uint8_t address)

  Begin a transmission to the I2C slave device.
- uint8_t endTransmission (void)

  End a transmission to the I2C slave device.
- virtual size_t write (uint8_t data)

  Write data to the I2C slave device.
- virtual size_t write (const uint8_t *data, size_t length)

  Write data to the I2C slave device.
- uint8_t requestFrom (uint8_t address, uint8_t length)

  Request bytes from a I2C slave device.
- virtual int available (void)

  Available.
- virtual int read (void)

  Read.
- virtual int peek (void)

  Peek.
- virtual void flush (void)

  Clear streams.

4.1.1 Detailed Description

Software I2C master class.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 SoftwareWire::SoftwareWire (uint8_t *pinSDA*, uint8_t *pinSCL*)

Constructor.

Parameters

pinSDA	pin for SDA
pinSCL	pin for SCL

4.1.3 Member Function Documentation

4.1.3.1 int SoftwareWire::available (void) [virtual]

Available.

Returns

number of bytes available on the stream

Note

To be called after requestFrom(address, length)

4.1.3.2 void SoftwareWire::beginTransmission (uint8_t *address*)

Begin a transmission to the I2C slave device.

Parameters

address	I2C slave address

4.1.3.3 uint8_t SoftwareWire::endTransmission (void)

End a transmission to the I2C slave device.

Returns

number of bytes sent

4.1.3.4 void SoftwareWire::flush (void) [virtual]

Clear streams.

4.1.3.5 int SoftwareWire::peek (void) [virtual]

Peek.

Returns

first value or -1=error

Note

peek doesn't remove the value read from the stream.
To be called after requestFrom(address, length)

4.1.3.6 int SoftwareWire::read (void) [virtual]

Read.

Returns

first value or -1=error

Note

read updates the stream by removing the value read.
To be called after requestFrom(address, length)

4.1.3.7 uint8_t SoftwareWire::requestFrom (uint8_t *address*, uint8_t *length*)

Request bytes from a I2C slave device.

Parameters

address	I2C slave address
length	number of bytes requested

Returns

number of bytes received

4.1.3.8 size_t SoftwareWire::write (uint8_t *data*) [virtual]

Write data to the I2C slave device.

Parameters

data	byte

Returns

number of bytes written=1

4.1.3.9 size_t SoftwareWire::write (const uint8_t * *data*, size_t *length*) [virtual]

Write data to the I2C slave device.

Parameters

data	array of bytes
length	number of bytes

Returns

number of bytes written

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

- SoftwareWire.h
- SoftwareWire.cpp

Chapter 5

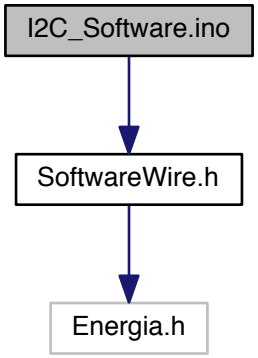
File Documentation

5.1 I2C_Software.ino File Reference

Main sketch.

```
#include "SoftwareWire.h"
```

Include dependency graph for I2C_Software.ino:



Macros

- #define I2C_KIND 2

  I2C_KIND.
- #define **SCL_PIN** P2_4
- #define **SDA_PIN** P2_3
- #define **_address** 0x18

Functions

- void setup (void)

  setup
- void loop (void)

loop

Variables

- SoftwareWire **myI2C** (P2_3, P2_4)
- uint16_t **_reading**

5.1.1 Detailed Description

Main sketch. Example for SoftwareWire with a ITG3200

Developed with embedXcode

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Date

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See Also

ReadMe.txt for references

- HMC6352 2-Axis Compass http://www.sparkfun.com/datasheets/Components/HMC6352.pdf

5.1.2 Macro Definition Documentation

5.1.2.1 #define I2C_KIND 2

I2C_KIND.

Note

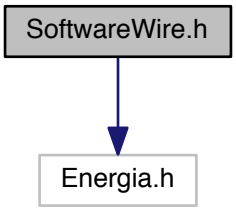
1=hardware 2=software

5.2 SoftwareWire.h File Reference

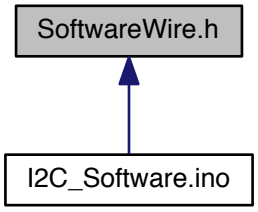
Software I2C for MSP430.

```
#include "Energia.h"
```

Include dependency graph for SoftwareWire.h:



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



Classes

- class SoftwareWire

  Software I2C master class.

Macros

- #define BUFFER_LENGTH 16

  Size of TX and RX buffers.

5.2.1 Detailed Description

Software I2C for MSP430. I2C master only

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Developed with embedXcode

Author

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5.2.2 Macro Definition Documentation

5.2.2.1 #define BUFFER_LENGTH 16

Size of TX and RX buffers.

Warning

MSP430G2553 only features 512 bytes of RAM

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