

# EMT-mailbox-template Reference Manual

Generated by Doxygen 1.8.9.1

Sun Jun 14 2015 20:27:52



# Contents

<b>1</b>	<b>Class Index</b>	<b>1</b>
1.1	Class List . . . . .	1
<b>2</b>	<b>File Index</b>	<b>3</b>
2.1	File List . . . . .	3
<b>3</b>	<b>Class Documentation</b>	<b>5</b>
3.1	Mailbox< mailboxType > Class Template Reference . . . . .	5
3.1.1	Detailed Description . . . . .	5
3.1.2	Constructor & Destructor Documentation . . . . .	6
3.1.2.1	Mailbox . . . . .	6
3.1.3	Member Function Documentation . . . . .	6
3.1.3.1	available . . . . .	6
3.1.3.2	begin . . . . .	6
3.1.3.3	post . . . . .	6
3.1.3.4	waitFor . . . . .	6
3.2	myMessage_t Struct Reference . . . . .	7
3.2.1	Detailed Description . . . . .	7
3.3	Semaphore Class Reference . . . . .	7
3.3.1	Detailed Description . . . . .	8
3.3.2	Member Function Documentation . . . . .	8
3.3.2.1	available . . . . .	8
3.3.2.2	begin . . . . .	8
<b>4</b>	<b>File Documentation</b>	<b>9</b>
4.1	Mailbox.h File Reference . . . . .	9
4.1.1	Detailed Description . . . . .	9
4.2	rtosGlobals.h File Reference . . . . .	10
4.2.1	Detailed Description . . . . .	10
4.3	Semaphore.h File Reference . . . . .	11
4.3.1	Detailed Description . . . . .	12
	<b>Index</b>	<b>13</b>



# Chapter 1

## Class Index

### 1.1 Class List

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

<a href="#">Mailbox&lt; mailboxType &gt;</a>	
RTOS mailbox as an object . . . . .	<a href="#">5</a>
<a href="#">myMessage_t</a>	
MyMessage type for mailbox . . . . .	<a href="#">7</a>
<a href="#">Semaphore</a>	
RTOS semaphore as object . . . . .	<a href="#">7</a>



## Chapter 2

# File Index

### 2.1 File List

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

<a href="#">Mailbox.h</a>		
Library header	.....	9
<a href="#">rtosGlobals.h</a>		
Header	.....	10
<b>rtosTasks.h</b>	.....	??
<a href="#">Semaphore.h</a>		
Library header	.....	11





## Chapter 3

# Class Documentation

### 3.1 Mailbox< mailboxType > Class Template Reference

RTOS mailbox as an object.

```
#include <Mailbox.h>
```

#### Public Member Functions

- [Mailbox](#) ()  
*Define the mailbox.*
- void [begin](#) (uint16\_t number=16)  
*Create the mailbox.*
- void [post](#) (mailboxType &message)  
*Post a message to the mailbox.*
- void [waitFor](#) (mailboxType &message)  
*Wait for a message from the mailbox.*
- uint16\_t [available](#) ()  
*Available messages to be read.*

#### 3.1.1 Detailed Description

```
template<typename mailboxType>class Mailbox< mailboxType >
```

RTOS mailbox as an object.

#### Warning

Header and code for tempalte class need to be on the same unique file. I guess it isn't a bug, but a feature :/

#### See also

<http://www.open-std.org/jtc1/sc22/wg21/docs/papers/2003/n1426.pdf>

The RTOS mailbox is encapsulated as a C++ object for easier use

#### Warning

NOTE: Only a single Task can pend on an [Mailbox](#) object at a time.

### 3.1.2 Constructor & Destructor Documentation

#### 3.1.2.1 `template<typename mailboxType > Mailbox< mailboxType >::Mailbox ( )`

Define the mailbox.

##### Warning

Specify typename between brackets in declaration

```
Mailbox<typename> myMailbox;
```

### 3.1.3 Member Function Documentation

#### 3.1.3.1 `template<typename mailboxType > uint16_t Mailbox< mailboxType >::available ( )`

Available messages to be read.

##### Returns

number of messages available on the mailbox to be read

##### Note

0 = no messages available

#### 3.1.3.2 `template<typename mailboxType > void Mailbox< mailboxType >::begin ( uint16_t number = 16 )`

Create the mailbox.

##### Parameters

<i>number</i>	number of messages of the mailbox, default = 16
---------------	---

#### 3.1.3.3 `template<typename mailboxType > void Mailbox< mailboxType >::post ( mailboxType & message )`

Post a message to the mailbox.

##### Parameters

<i>message</i>	message to be posted on the mailbox
----------------	-------------------------------------

##### Warning

Message must be of type typename

#### 3.1.3.4 `template<typename mailboxType > void Mailbox< mailboxType >::waitFor ( mailboxType & message )`

Wait for a message from the mailbox.

##### Parameters

---

<i>message</i>	message read from mailbox when available
----------------	--

**Warning**

Message must be of type typename

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

- [Mailbox.h](#)

## 3.2 myMessage\_t Struct Reference

myMessage type for mailbox

```
#include <rtosGlobals.h>
```

**Public Attributes**

- uint32\_t [chrono](#)  
*for millis()*
- char [buffer](#) [10]  
*for origin*

### 3.2.1 Detailed Description

myMessage type for mailbox

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

- [rtosGlobals.h](#)

## 3.3 Semaphore Class Reference

RTOS semaphore as object.

```
#include <Semaphore.h>
```

**Public Member Functions**

- [Semaphore](#) ()  
*Define the semaphore.*
- void [begin](#) (uint8\_t count=1)  
*Create the semaphore.*
- void [post](#) ()  
*Post a semaphore.*
- uint16\_t [available](#) ()  
*Available count.*
- void [waitFor](#) ()  
*Wait for the semaphore.*

### 3.3.1 Detailed Description

RTOS semaphore as object.

The RTOS semaphore is encapsulated as a C++ object for easier use

### 3.3.2 Member Function Documentation

#### 3.3.2.1 `uint16_t Semaphore::available ( )`

Available count.

##### Returns

number of available count

#### 3.3.2.2 `void Semaphore::begin ( uint8_t count = 1 )`

Create the semaphore.

##### Parameters

<i>count</i>	usually number of ressources to synchronise, default = 1
--------------	--

##### Note

For serial port, take 1

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

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

## Chapter 4

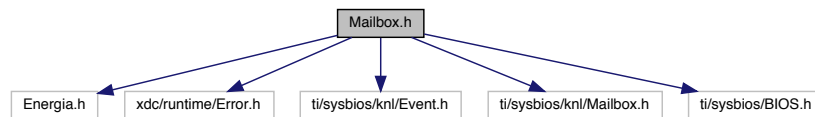
# File Documentation

### 4.1 Mailbox.h File Reference

Library header.

```
#include <Energia.h>
#include <xdc/runtime/Error.h>
#include <ti/sysbios/knl/Event.h>
#include <ti/sysbios/knl/Mailbox.h>
#include <ti/sysbios/BIOS.h>
```

Include dependency graph for Mailbox.h:



### Classes

- class `Mailbox< mailboxType >`  
*RTOS mailbox as an object.*

#### 4.1.1 Detailed Description

Library header.

RTOS mailbox as C++ object for Energia MT

**Project** Energia MT 0101E0016

**Author**

Energia, base  
Rei Vilo, enhancements

**Date**

Jun 14, 2015 09:53

**Version**

103

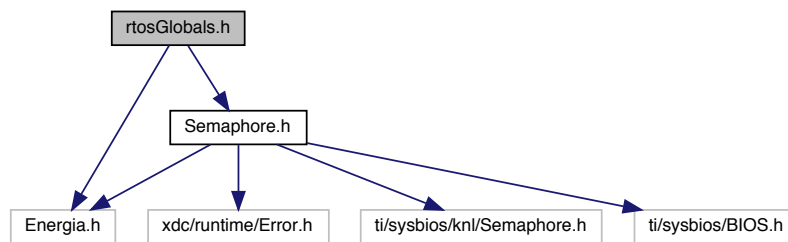
**See also**SYS/BIOS (TI-RTOS Kernel) v6.41 User's Guide (spruex3o) <http://www.ti.com/lit/pdf/spruex3>

## 4.2 rtosGlobals.h File Reference

Header.

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

Include dependency graph for rtosGlobals.h:



### Classes

- struct [myMessage\\_t](#)  
*myMessage type for mailbox*

### Variables

- [Mailbox](#) < [myMessage\\_t](#) > [myMailbox](#)  
*myMailbox*
- [Semaphore](#) [mySemaphore](#)  
*mySemaphore*

#### 4.2.1 Detailed Description

Header.

Global variables for Energia MT project

**Project** MultiBlink\_eXDeveloped with [embedXcode+](#)

**Author**

Rei Vilo

<http://embeddedcomputing.weebly.com>**Date**

Jun 05, 2015 13:34

**Version**

101

**Copyright**

(c) Rei Vilo, 2015

CC = BY SA NC

**See also**

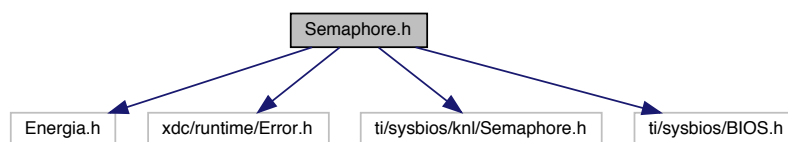
ReadMe.txt for references

## 4.3 Semaphore.h File Reference

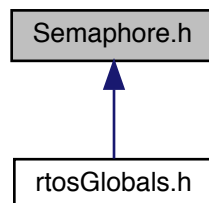
Library header.

```
#include <Energia.h>
#include <xdc/runtime/Error.h>
#include <ti/sysbios/knl/Semaphore.h>
#include <ti/sysbios/BIOS.h>
```

Include dependency graph for Semaphore.h:



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



## Classes

- class [Semaphore](#)  
*RTOS semaphore as object.*

### 4.3.1 Detailed Description

Library header.

RTOS semaphore as C++ object for Energia MT

**Project** EMT-Semaphore

*Developed with* [embedXcode+](#)

#### Author

Rei Vilo

<http://embeddedcomputing.weebly.com>

#### Date

Jun 08, 2015 09:53

#### Version

104

#### Copyright

(c) Rei Vilo, 2015  
CC = BY SA NC

#### See also

ReadMe.txt for references and example

SYS/BIOS (TI-RTOS Kernel) v6.41 User's Guide (spruex3o) <http://www.ti.com/lit/pdf/spruex3>



# Index

available

Mailbox, [6](#)

Semaphore, [8](#)

begin

Mailbox, [6](#)

Semaphore, [8](#)

Mailbox

available, [6](#)

begin, [6](#)

Mailbox, [6](#)

post, [6](#)

waitFor, [6](#)

Mailbox< mailboxType >, [5](#)

Mailbox.h, [9](#)

myMessage\_t, [7](#)

post

Mailbox, [6](#)

rtosGlobals.h, [10](#)

Semaphore, [7](#)

available, [8](#)

begin, [8](#)

Semaphore.h, [11](#)

waitFor

Mailbox, [6](#)