# Erriez memory usage library for Arduino

1.0.0

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# Chapter 1

# Memory Usage library for Arduino AVR targets

This Arduino library prints memory usage on the Serial port.

### Features

This library provides:

- Print memory usage on the serial console
- Get stack and heap size
- Get .data and .bss sections size

### Examples

Arduino IDE | Examples | Erriez Memory Usage:

- PrintMemoryUsage

### Documentation

- Doxygen online HTML
- Doxygen PDF

### Print memory usage on serial port

```
{c++}
void setup()
{
  // Initialize serial port
  Serial.begin(115200);

  // Print memory usage
  printMemoryUsage();
}
```

#### Output serial port Arduino Uno

```
{c++}
SRAM size:  2048 Bytes
.data size: 22 Bytes
.bss size:  170 Bytes
Stack size: 2 Bytes
Heap size:  0 Bytes
Free mem:   1854 Bytes
```

#### Get RAM size

Get total on-chip SRAM size in Bytes:

```
{c++}
unsigned int ramSize = getRamSize();
```

#### Get free memory

Get free memory size which can be allocated between stack and heap:

```
{c++}
unsigned int freeMemSize = getFreeMemSize();
```

### Get stack size

```
{c++}
unsigned int stackSize = getStackSize();
```

### Get heap size

```
{c++}
unsigned int heapSize = getHeapSize();
```

### Get .data section size

```
{c++}
unsigned int dataSize = getDataSectionSize();
```

### Get .bss section size

```
{c++}
unsigned int bssSize = getBssSectionSize();
```

## Library installation

Please refer to the Wiki page.

## Other Arduino Libraries and Sketches from Erriez

- Erriez Libraries and Sketches

# Chapter 2

# File Index

## 2.1 File List

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


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# Chapter 3

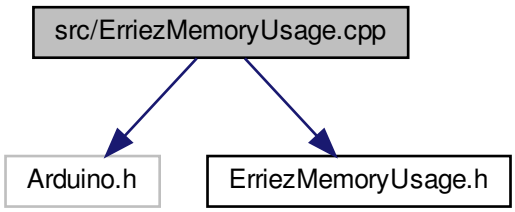
# File Documentation

## 3.1 src/ErriezMemoryUsage.cpp File Reference

Memory usage library for Arduino by Erriez.

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

Include dependency graph for ErriezMemoryUsage.cpp:




### Functions

- unsigned int getRamSize ()
  *Get RAM size in Bytes.*
- unsigned int getDataSectionSize ()
  *Get data section size in Bytes.*
- unsigned int getBssSectionSize ()
  *Get BSS section size in Bytes.*
- unsigned int getStackSize ()
  *Get stack size in Bytes.*
- unsigned int getHeapSize ()
  *Get heap size in Bytes.*
- unsigned int getFreeMemSize ()
  *Get free memory size in Bytes.*
- void printMemoryUsage ()
  *Print memory usage on serial port.*

### 3.1.1 Detailed Description

Memory usage library for Arduino by Erriez.

Source: https://github.com/Erriez/ErriezMemoryUsage Documentation: https://erriez.↩
github.io/ErriezMemoryUsage

### 3.1.2 Function Documentation

#### 3.1.2.1 getBssSectionSize()

```
unsigned int getBssSectionSize ( )
```

Get BSS section size in Bytes.

**Returns**

BSS section size.

Definition at line 61 of file ErriezMemoryUsage.cpp.

#### 3.1.2.2 getDataSectionSize()

```
unsigned int getDataSectionSize ( )
```

Get data section size in Bytes.

**Returns**

Data section size.

Definition at line 49 of file ErriezMemoryUsage.cpp.

#### 3.1.2.3 getFreeMemSize()

```
unsigned int getFreeMemSize ( )
```

Get free memory size in Bytes.

**Returns**

Free memory size.

Definition at line 98 of file ErriezMemoryUsage.cpp.

#### 3.1.2.4 getHeapSize()

```
unsigned int getHeapSize ( )
```

Get heap size in Bytes.

**Returns**

Heap size.

Definition at line 82 of file ErriezMemoryUsage.cpp.

#### 3.1.2.5 getRamSize()

```
unsigned int getRamSize ( )
```

Get RAM size in Bytes.

**Returns**

RAMEND - RAMSTART + 1.

Definition at line 40 of file ErriezMemoryUsage.cpp.

#### 3.1.2.6 getStackSize()

```
unsigned int getStackSize ( )
```

Get stack size in Bytes.

**Returns**

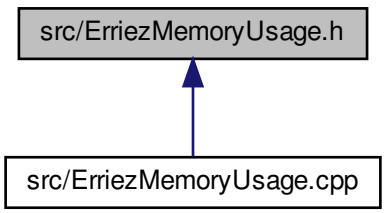
Stack size.

Definition at line 73 of file ErriezMemoryUsage.cpp.

## 3.2 src/ErriezMemoryUsage.h File Reference

Memory usage library for Arduino by Erriez.

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



### Functions

- unsigned int getRamSize ()
  *Get RAM size in Bytes.*
- unsigned int getDataSectionSize ()
  *Get data section size in Bytes.*
- unsigned int getBssSectionSize ()
  *Get BSS section size in Bytes.*
- unsigned int getStackSize ()
  *Get stack size in Bytes.*
- unsigned int getHeapSize ()
  *Get heap size in Bytes.*
- unsigned int getFreeMemSize ()
  *Get free memory size in Bytes.*
- void printMemoryUsage ()
  *Print memory usage on serial port.*

## 3.2.1 Detailed Description

Memory usage library for Arduino by Erriez.

Source: https://github.com/Erriez/ErriezMemoryUsage Documentation: https://erriez.github.io/ErriezMemoryUsage

## 3.2.2 Function Documentation

### 3.2.2.1 getBssSectionSize()

```
unsigned int getBssSectionSize ( )
```

Get BSS section size in Bytes.

**Returns**

BSS section size.

Definition at line 61 of file ErriezMemoryUsage.cpp.

### 3.2.2.2 getDataSectionSize()

```
unsigned int getDataSectionSize ( )
```

Get data section size in Bytes.

**Returns**

Data section size.

Definition at line 49 of file ErriezMemoryUsage.cpp.

#### 3.2.2.3 getFreeMemSize()

```
unsigned int getFreeMemSize ( )
```

Get free memory size in Bytes.

**Returns**

Free memory size.

Definition at line 98 of file ErriezMemoryUsage.cpp.

#### 3.2.2.4 getHeapSize()

```
unsigned int getHeapSize ( )
```

Get heap size in Bytes.

**Returns**

Heap size.

Definition at line 82 of file ErriezMemoryUsage.cpp.

#### 3.2.2.5 getRamSize()

```
unsigned int getRamSize ( )
```

Get RAM size in Bytes.

**Returns**

RAMEND - RAMSTART + 1.

Definition at line 40 of file ErriezMemoryUsage.cpp.

#### 3.2.2.6 getStackSize()

```
unsigned int getStackSize ( )
```

Get stack size in Bytes.

**Returns**

Stack size.

Definition at line 73 of file ErriezMemoryUsage.cpp.

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