

# **SWC\_EEPROM\_I2C**

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# Data Structure Index

## Data Structures

Here are the data structures with brief descriptions:

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# File Index

## File List

Here is a list of all files with brief descriptions:

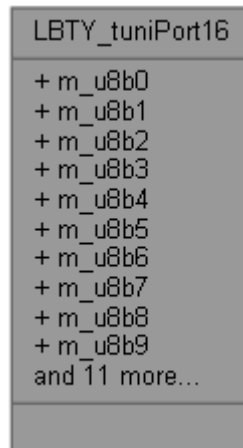
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# Data Structure Documentation

## LBTY\_tuniPort16 Union Reference

```
#include <LBTY_int.h>
```

Collaboration diagram for LBTY\_tuniPort16:



### Data Fields

- struct {
  - [u8 m\\_u8b0](#):1
  - [u8 m\\_u8b1](#):1
  - [u8 m\\_u8b2](#):1
  - [u8 m\\_u8b3](#):1
  - [u8 m\\_u8b4](#):1
  - [u8 m\\_u8b5](#):1
  - [u8 m\\_u8b6](#):1
  - [u8 m\\_u8b7](#):1
  - [u8 m\\_u8b8](#):1
  - [u8 m\\_u8b9](#):1
  - [u8 m\\_u8b10](#):1
  - [u8 m\\_u8b11](#):1
  - [u8 m\\_u8b12](#):1
  - [u8 m\\_u8b13](#):1
  - [u8 m\\_u8b14](#):1
  - [u8 m\\_u8b15](#):1
  - } [sBits](#)
  - struct {
  - [u8 m\\_u8low](#)
  - [u8 m\\_u8high](#)
  - } [sBytes](#)
  - [u16 u\\_u16Word](#)
-

## Field Documentation

[u8](#) m\_u8b0

[u8](#) m\_u8b1

[u8](#) m\_u8b10

[u8](#) m\_u8b11

[u8](#) m\_u8b12

[u8](#) m\_u8b13

[u8](#) m\_u8b14

[u8](#) m\_u8b15

[u8](#) m\_u8b2

[u8](#) m\_u8b3

[u8](#) m\_u8b4

[u8](#) m\_u8b5

[u8](#) m\_u8b6

[u8](#) m\_u8b7

[u8](#) m\_u8b8

[u8](#) m\_u8b9

[u8](#) m\_u8high

[u8](#) m\_u8low

struct { ... } sBits

struct { ... } sBytes

[u16](#) u\_u16Word

---

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

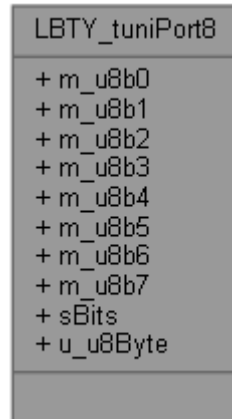
- H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/[LBTY\\_int.h](#)



## LBTY\_tuniPort8 Union Reference

```
#include <LBTY_int.h>
```

Collaboration diagram for LBTY\_tuniPort8:



### Data Fields

- struct {
- [u8 m\\_u8b0](#):1
- [u8 m\\_u8b1](#):1
- [u8 m\\_u8b2](#):1
- [u8 m\\_u8b3](#):1
- [u8 m\\_u8b4](#):1
- [u8 m\\_u8b5](#):1
- [u8 m\\_u8b6](#):1
- [u8 m\\_u8b7](#):1
- } [sBits](#)
- [u8 u\\_u8Byte](#)

---

### Detailed Description

Union Byte bit by bit

---

## Field Documentation

[u8](#) m\_u8b0

[u8](#) m\_u8b1

[u8](#) m\_u8b2

[u8](#) m\_u8b3

[u8](#) m\_u8b4

[u8](#) m\_u8b5

[u8](#) m\_u8b6

[u8](#) m\_u8b7

struct { ... } sBits

[u8](#) u\_u8Byte

---

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

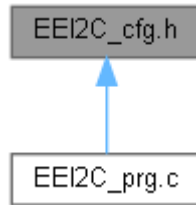
- H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/[LBTY\\_int.h](#)

# **File Documentation**

## **EEI2C\_cfg.c File Reference**

## EEI2C\_cfg.h File Reference

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



## Macros

- #define [EE\\_SLAVE\\_ADDRESS](#) 0x50

---

## Macro Definition Documentation

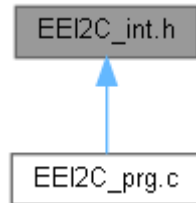
**#define EE\_SLAVE\_ADDRESS 0x50**

## EEI2C\_cfg.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name      : EEI2C_cfg.h */
5 /* Author         : MAAM */
6 /* Version        : v01.2 */
7 /* date           : Apr 13, 2023 */
8 /* ***** */
9 /* ***** HEADER FILES INCLUDES ***** */
10 /* ***** */
11
12 #ifndef EEI2C_CFG_H_
13 #define EEI2C_CFG_H_
14
15 /* ***** */
16 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
17 /* ***** */
18
19 /* ***** */
20 /* ***** MACRO/DEFINE SECTION ***** */
21 /* ***** */
22
23 #define EE_SLAVE_ADDRESS      0x50
24
25 /* ***** */
26 /* ***** CONST SECTION ***** */
27 /* ***** */
28
29 /* ***** */
30 /* ***** VARIABLE SECTION ***** */
31 /* ***** */
32
33 /* ***** */
34 /* ***** FUNCTION SECTION ***** */
35 /* ***** */
36
37
38 #endif /* EEI2C_CFG_H_ */
39 /***** E N D (EEI2C_cfg.h) *****/
```

## EEI2C\_int.h File Reference

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



## Functions

- void [EEI2C\\_vidInit](#) (void)
- void [EEI2C\\_u8SetChar](#) ([u8](#) u8char, [u8](#) u8Address)
- void [EEI2C\\_u8GetChar](#) ([u8](#) \*pu8char, [u8](#) u8Address)

---

## Function Documentation

**void EEI2C\_u8GetChar ([u8](#) \* *pu8char*, [u8](#) *u8Address*)**

```
61                                     {
62     while(I2C_u8GetINTF());
63     I2C_u8SetSTART();
64     I2C_u8SetAddress(EE\_SLAVE\_ADDRESS, I2C_WRITE);
65     I2C_u8SetData(u8Address);
66     I2C_u8SetSTART();
67     I2C_u8SetAddress(EE\_SLAVE\_ADDRESS, I2C_READ);
68     I2C_u8GetData(pu8char, LBTY\_RESET);
69     I2C_u8SetSTOP();
70 }
```

**void EEI2C\_u8SetChar ([u8](#) *u8char*, [u8](#) *u8Address*)**

```
52                                     {
53     while(I2C_u8GetINTF());
54     I2C_u8SetSTART();
55     //I2C_u8SetRepeatSTART();
56     I2C_u8SetAddress(EE\_SLAVE\_ADDRESS, I2C_WRITE);
57     I2C_u8SetData(u8Address);
58     I2C_u8SetData(u8char);
59     I2C_u8SetSTOP();
60 }
```

**void EEI2C\_vidInit (void)**

```
48                                     {
49     I2C_vidInit();
50 }
```

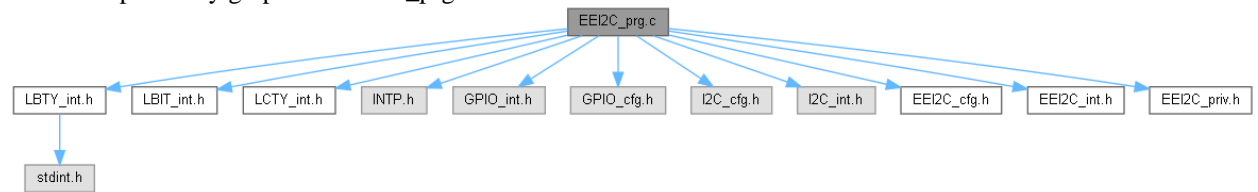
## EEI2C\_int.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name      : EEI2C_int.h */
5 /* Author         : MAAM */
6 /* Version        : v01.2 */
7 /* date           : Apr 13, 2023 */
8 /* ***** */
9 /* ***** HEADER FILES INCLUDES ***** */
10 /* ***** */
11
12 #ifndef EEI2C_INT_H_
13 #define EEI2C_INT_H_
14
15 /* ***** */
16 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
17 /* ***** */
18
19 /* ***** */
20 /* ***** MACRO/DEFINE SECTION ***** */
21 /* ***** */
22
23 /* ***** */
24 /* ***** CONST SECTION ***** */
25 /* ***** */
26
27 /* ***** */
28 /* ***** VARIABLE SECTION ***** */
29 /* ***** */
30
31 /* ***** */
32 /* ***** FUNCTION SECTION ***** */
33 /* ***** */
34
35 extern void EEI2C_vidInit(void);
36
37 extern void EEI2C_u8SetChar(u8 u8char, u8 u8Address);
38 extern void EEI2C_u8GetChar(u8* pu8char, u8 u8Address);
39
40 #endif /* EEI2C_INT_H_ */
41 /***** E N D (I2C_int.h) *****/
```

## EEI2C\_prg.c File Reference

```
#include "LBTY_int.h"
#include "LBIT_int.h"
#include "LCTY_int.h"
#include "INTP.h"
#include "GPIO_int.h"
#include "GPIO_cfg.h"
#include "I2C_cfg.h"
#include "I2C_int.h"
#include "EEI2C_cfg.h"
#include "EEI2C_int.h"
#include "EEI2C_priv.h"
```

Include dependency graph for EEI2C\_prg.c:



## Functions

- void [EEI2C\\_vidInit](#) (void)
- void [EEI2C\\_u8SetChar](#) ([u8](#) u8char, [u8](#) u8Address)
- void [EEI2C\\_u8GetChar](#) ([u8](#) \*pu8char, [u8](#) u8Address)

## Function Documentation

**void EEI2C\_u8GetChar ([u8](#) \* pu8char, [u8](#) u8Address)**

```
61         {
62             while(I2C_u8GetINTF());
63             I2C_u8SetSTART();
64             I2C_u8SetAddress(EE_SLAVE_ADDRESS, I2C_WRITE);
65             I2C_u8SetData(u8Address);
66             I2C_u8SetSTART();
67             I2C_u8SetAddress(EE_SLAVE_ADDRESS, I2C_READ);
68             I2C_u8GetData(pu8char, LBTY_RESET);
69             I2C_u8SetSTOP();
70 }
```

**void EEI2C\_u8SetChar ([u8](#) u8char, [u8](#) u8Address)**

```
52         {
53             while(I2C_u8GetINTF());
54             I2C_u8SetSTART();
55             //I2C_u8SetRepeatSTART();
56             I2C_u8SetAddress(EE_SLAVE_ADDRESS, I2C_WRITE);
57             I2C_u8SetData(u8Address);
58             I2C_u8SetData(u8char);
59             I2C_u8SetSTOP();
60 }
```

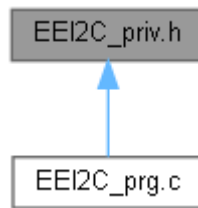
**void EEI2C\_vidInit (void)**

```
48         {
49             I2C_vidInit();
50 }
```



## EEI2C\_priv.h File Reference

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



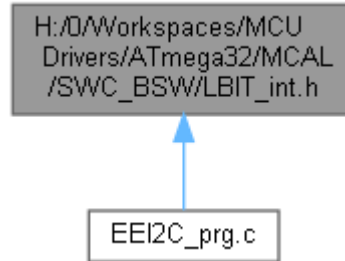
## EEI2C\_priv.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name      : EEI2C_priv.h */
5 /* Author         : MAAM */
6 /* Version        : v01.2 */
7 /* date           : Apr 13, 2023 */
8 /* ***** */
9 /* ***** HEADER FILES INCLUDES ***** */
10 /* ***** */
11
12 #ifndef EEI2C_PRIV_H_
13 #define EEI2C_PRIV_H_
14
15 /* ***** */
16 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
17 /* ***** */
18
19 /* ***** */
20 /* ***** MACRO/DEFINE SECTION ***** */
21 /* ***** */
22
23 /* ***** */
24 /* ***** CONST SECTION ***** */
25 /* ***** */
26
27 /* ***** */
28 /* ***** VARIABLE SECTION ***** */
29 /* ***** */
30
31 /* ***** */
32 /* ***** FUNCTION SECTION ***** */
33 /* ***** */
34
35 #endif /* EEI2C_PRIV_H_ */
36 /***** E N D (EEI2C_priv.h) *****/
```

## **main.c File Reference**

## H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/LBIT\_int.h File Reference

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



### Macros

- #define [BV](#)(bit) (1u<<(bit))
- #define [SET\\_BIT](#)(REG, bit) ((REG) |= (1u<<(bit)))
- #define [CLR\\_BIT](#)(REG, bit) ((REG) &= ~(1u<<(bit)))
- #define [TOG\\_BIT](#)(REG, bit) ((REG) ^= (1u<<(bit)))
- #define [SET\\_BYTE](#)(REG, bit) ((REG) |= (0xFFu<<(bit)))
- #define [CLR\\_BYTE](#)(REG, bit) ((REG) &= ~(0xFFu<<(bit)))
- #define [TOG\\_BYTE](#)(REG, bit) ((REG) ^= (0xFFu<<(bit)))
- #define [SET\\_MASK](#)(REG, MASK) ((REG) |= (MASK))
- #define [CLR\\_MASK](#)(REG, MASK) ((REG) &= ~(MASK))
- #define [TOG\\_MASK](#)(REG, MASK) ((REG) ^= (MASK))
- #define [GET\\_MASK](#)(REG, MASK) ((REG) & (MASK))
- #define [SET\\_REG](#)(REG) ((REG) = ~(0u))
- #define [CLR\\_REG](#)(REG) ((REG) = (0u))
- #define [TOG\\_REG](#)(REG) ((REG) ^= ~(0u))
- #define [GET\\_BIT](#)(REG, bit) (((REG)>>(bit)) & 0x01u)
- #define [GET\\_NIB](#)(REG, bit) (((REG)>>(bit)) & 0x0Fu)
- #define [GET\\_BYTE](#)(REG, bit) (((REG)>>(bit)) & 0xFFu)
- #define [ASSIGN\\_BIT](#)(REG, bit, value) ((REG) = ((REG) & ~(0x01u<<(bit))) | (((value) & 0x01u)<<(bit)))
- #define [ASSIGN\\_NIB](#)(REG, bit, value) ((REG) = ((REG) & ~(0x0Fu<<(bit))) | (((value) & 0x0Fu)<<(bit)))
- #define [ASSIGN\\_BYTE](#)(REG, bit, value) ((REG) = ((REG) & ~(0xFFu<<(bit))) | (((value) & 0xFFu)<<(bit)))
- #define [CON\\_u8Bits](#)(b7, b6, b5, b4, b3, b2, b1, b0)
 

(0b##b7##b6##b5##b4##b3##b2##b1##b0)
- #define [CON\\_u16Bits](#)(b15, b14, b13, b12, b11, b10, b9, b8, b7, b6, b5, b4, b3, b2, b1, b0)
 

(0b##b15##b14##b13##b12##b11##b10##b9##b8##b7##b6##b5##b4##b3##b2##b1##b0)

## Macro Definition Documentation

**#define \_BV( bit) (1u<<(bit))**

**#define ASSIGN\_BIT( REG, bit, value) ((REG) = ((REG) & ~(0x01u<<(bit))) |  
(((value) & 0x01u)<<(bit)))**

**#define ASSIGN\_BYTE( REG, bit, value) ((REG) = ((REG) & ~(0xFFu<<(bit))) |  
(((value) & 0xFFu)<<(bit)))**

**#define ASSIGN\_NIB( REG, bit, value) ((REG) = ((REG) & ~(0x0Fu<<(bit))) |  
(((value) & 0x0Fu)<<(bit)))**

**#define CLR\_BIT( REG, bit) ((REG) &= ~(1u<<(bit)))**

**#define CLR\_BYTE( REG, bit) ((REG) &= ~(0xFFu<<(bit)))**

**#define CLR\_MASK( REG, MASK) ((REG) &= ~(MASK))**

**#define CLR\_REG( REG) ((REG) = (0u))**

**#define CON\_u16Bits( b15, b14, b13, b12, b11, b10, b9, b8, b7, b6, b5, b4, b3, b2, b1, b0)**  
**(0b##b15##b14##b13##b12##b11##b10##b9##b8##b7##b6##b5##b4##b3##b2##b1##b0)**

**#define CON\_u8Bits( b7, b6, b5, b4, b3, b2, b1, b0)**  
**(0b##b7##b6##b5##b4##b3##b2##b1##b0)**

**#define GET\_BIT( REG, bit) (((REG)>>(bit)) & 0x01u)**

**#define GET\_BYTE( REG, bit) (((REG)>>(bit)) & 0xFFu)**

**#define GET\_MASK( REG, MASK) ((REG) & (MASK))**

**#define GET\_NIB( REG, bit) (((REG)>>(bit)) & 0x0Fu)**

**#define SET\_BIT( REG, bit) ((REG) |= (1u<<(bit)))**

Bitwise Operation

```
#define SET_BYTE( REG, bit) ((REG) |= (0xFFu<<(bit)))  
  
#define SET_MASK( REG, MASK) ((REG) |= (MASK))  
  
#define SET_REG( REG) ((REG) = ~(0u))  
  
#define TOG_BIT( REG, bit) ((REG) ^= (1u<<(bit)))  
  
#define TOG_BYTE( REG, bit) ((REG) ^= (0xFFu<<(bit)))  
  
#define TOG_MASK( REG, MASK) ((REG) ^= (MASK))  
  
#define TOG_REG( REG) ((REG) ^= ~(0u))
```

```

Go to the documentation of this file.1 /*
***** */
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name      : LBIT_int.h */
5 /* Author         : MAAM */
6 /* Version        : v01 */
7 /* date           : Mar 24, 2023 */
8 /* description    : Bitwise Library */
9 /* ***** */
10 /* ***** HEADER FILES INCLUDES ***** */
11 /* ***** */
12
13 #ifndef LBIT_INT_H_
14 #define LBIT_INT_H_
15
16 /* ***** */
17 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
18 /* ***** */
19
20 /* ***** */
21 /* ***** MACRO/DEFINE SECTION ***** */
22 /* ***** */
23
24 #define _BV(bit) (1u<<(bit))
25
26 #define SET_BIT(REG, bit) ((REG) |= (1u<<(bit)))
27 #define CLR_BIT(REG, bit) ((REG) &= ~(1u<<(bit)))
28 #define TOG_BIT(REG, bit) ((REG) ^= (1u<<(bit)))
29
30
31 #define SET_BYTE(REG, bit) ((REG) |= (0xFFu<<(bit)))
32 #define CLR_BYTE(REG, bit) ((REG) &= ~(0xFFu<<(bit)))
33 #define TOG_BYTE(REG, bit) ((REG) ^= (0xFFu<<(bit)))
34
35 #define SET_MASK(REG, MASK) ((REG) |= (MASK))
36 #define CLR_MASK(REG, MASK) ((REG) &= ~(MASK))
37 #define TOG_MASK(REG, MASK) ((REG) ^= (MASK))
38 #define GET_MASK(REG, MASK) ((REG) & (MASK))
39
40 #define SET_REG(REG) ((REG) = ~(0u))
41 #define CLR_REG(REG) ((REG) = (0u))
42 #define TOG_REG(REG) ((REG) ^= ~(0u))
43
44 #define GET_BIT(REG, bit) (((REG)>>(bit)) & 0x01u)
45 #define GET_NIB(REG, bit) (((REG)>>(bit)) & 0x0Fu)
46 #define GET_BYTE(REG, bit) (((REG)>>(bit)) & 0xFFu)
47
48 #define ASSIGN_BIT(REG, bit, value) ((REG) = ((REG) & ~(0x01u<<(bit))) | ((value) & 0x01u)<<(bit)))
49 #define ASSIGN_NIB(REG, bit, value) ((REG) = ((REG) & ~(0x0Fu<<(bit))) | ((value) & 0x0Fu)<<(bit)))
50 #define ASSIGN_BYTE(REG, bit, value) ((REG) = ((REG) & ~(0xFFu<<(bit))) | ((value) & 0xFFu)<<(bit)))
51
52 /*
53 #define ASSIGN_BIT(REG,bit,value) do{
54 \
55 \
56 \
57 \
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68 \
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```

```

65 (0b##b15##b14##b13##b12##b11##b10##b9##b8##b7##b6##b5##b4##b3##b2##b1##b0)
66
67 /* ***** */
68 /* ***** CONST SECTION ***** */
69 /* ***** */
70
71 /* ***** */
72 /* ***** VARIABLE SECTION ***** */
73 /* ***** */
74
75 /* ***** */
76 /* ***** FUNCTION SECTION ***** */
77 /* ***** */
78
79
80 #endif /* LBIT_INT_H_ */
81 /***** E N D (LBIT_int.h) *****/

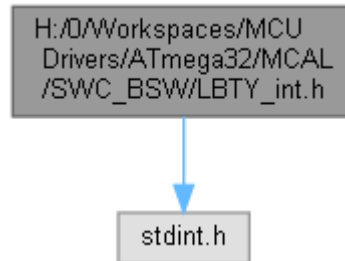
```



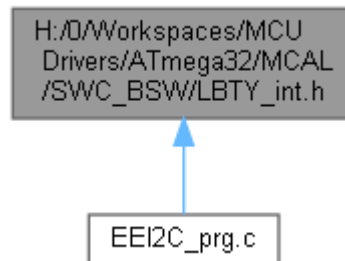
## H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/LBTY\_int.h File Reference

#include <stdint.h>

Include dependency graph for LBTY\_int.h:



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



## Data Structures

- union [LBTY\\_tuniPort8](#) union [LBTY\\_tuniPort16](#)

## Macros

- #define [\\_\\_IO](#) volatile
- #define [\\_\\_O](#) volatile
- #define [\\_\\_I](#) volatile const
- #define [LBTY\\_u8vidNOP](#)()
- #define [LBTY\\_NULL](#) ((void \*) 0U)
- #define [LBTY\\_u8ZERO](#) ((u8)0x00U)
- #define [LBTY\\_u8MAX](#) ((u8)0xFFU)
- #define [LBTY\\_s8MAX](#) ((s8)0x7F)
- #define [LBTY\\_s8MIN](#) ((s8)0x80)
- #define [LBTY\\_u16ZERO](#) ((u16)0x0000U)
- #define [LBTY\\_u16MAX](#) ((u16)0xFFFFU)
- #define [LBTY\\_s16MAX](#) ((u16)0x7FFF)
- #define [LBTY\\_s16MIN](#) ((u16)0x8000)
- #define [LBTY\\_u32ZERO](#) ((u32)0x00000000UL)
- #define [LBTY\\_u32MAX](#) ((u32)0xFFFFFFFFUL)
- #define [LBTY\\_s32MAX](#) ((u32)0x7FFFFFFFL)
- #define [LBTY\\_s32MIN](#) ((u32)0x80000000L)
- #define [LBTY\\_u64ZERO](#) ((u64)0x0000000000000000ULL)
- #define [LBTY\\_u64MAX](#) ((u64)0xFFFFFFFFFFFFFFFFULL)
- #define [LBTY\\_s64MAX](#) ((u64)0x7FFFFFFFFFFFFFFFL)
- #define [LBTY\\_s64MIN](#) ((u64)0x8000000000000000LL)

## Typedefs

- typedef uint8\_t [u8](#)
- typedef uint16\_t [u16](#)
- typedef uint32\_t [u32](#)
- typedef uint64\_t [u64](#)
- typedef int8\_t [s8](#)
- typedef int16\_t [s16](#)
- typedef int32\_t [s32](#)
- typedef int64\_t [s64](#)
- typedef float [f32](#)
- typedef double [f64](#)
- typedef [u8](#) \* [pu8](#)
- typedef [u16](#) \* [pu16](#)
- typedef [u32](#) \* [pu32](#)
- typedef [u64](#) \* [pu64](#)
- typedef [s8](#) \* [ps8](#)
- typedef [s16](#) \* [ps16](#)
- typedef [s32](#) \* [ps32](#)
- typedef [s64](#) \* [ps64](#)

## Enumerations

- enum [LBTY\\_tenuFlagStatus](#) { [LBTY\\_RESET](#) = 0, [LBTY\\_SET](#) = ![LBTY\\_RESET](#) }
  - enum [LBTY\\_tenuBoolean](#) { [LBTY\\_TRUE](#) = 0x55, [LBTY\\_FALSE](#) = 0xAA }
  - enum [LBTY\\_tenuErrorStatus](#) { [LBTY\\_OK](#) = (u16)0, [LBTY\\_NOK](#), [LBTY\\_NULL\\_POINTER](#), [LBTY\\_INDEX\\_OUT\\_OF\\_RANGE](#), [LBTY\\_NO\\_MASTER\\_CHANNEL](#), [LBTY\\_READ\\_ERROR](#), [LBTY\\_WRITE\\_ERROR](#), [LBTY\\_UNDEFINED\\_ERROR](#), [LBTY\\_IN\\_PROGRESS](#) }
-

## Macro Definition Documentation

**#define** `__I` `volatile const`

**#define** `__IO` `volatile`

**#define** `__O` `volatile`

**#define** `LBTY_NULL` `((void *) 0U)`

**#define** `LBTY_s16MAX` `((u16)0x7FFF )`

**#define** `LBTY_s16MIN` `((u16)0x8000 )`

**#define** `LBTY_s32MAX` `((u32)0x7FFFFFFFL )`

**#define** `LBTY_s32MIN` `((u32)0x80000000L )`

**#define** `LBTY_s64MAX` `((u64)0x7FFFFFFFFFFFFFFFL )`

**#define** `LBTY_s64MIN` `((u64)0x8000000000000000LL )`

**#define** `LBTY_s8MAX` `((s8)0x7F )`

**#define** `LBTY_s8MIN` `((s8)0x80 )`

**#define** `LBTY_u16MAX` `((u16)0xFFFFU)`

**#define** `LBTY_u16ZERO` `((u16)0x0000U)`

**#define** `LBTY_u32MAX` `((u32)0xFFFFFFFFUL)`

**#define** `LBTY_u32ZERO` `((u32)0x00000000UL)`

**#define** `LBTY_u64MAX` `((u64)0xFFFFFFFFFFFFFFFFULL)`

**#define** `LBTY_u64ZERO` `((u64)0x0000000000000000ULL)`

**#define** `LBTY_u8MAX` `((u8)0xFFU)`

**#define** `LBTY_u8vidNOP()`

**#define** `LBTY_u8ZERO` `((u8)0x00U)`

Data Types Limitation

---

## Typedef Documentation

**typedef** `float` [f32](#)

Standard Real Decimal number

**typedef double [f64](#)**

**typedef [s16](#)\* [ps16](#)**

**typedef [s32](#)\* [ps32](#)**

**typedef [s64](#)\* [ps64](#)**

**typedef [s8](#)\* [ps8](#)**

Standard Pointer to Signed Byte/Word/Long\_Word

**typedef [u16](#)\* [pu16](#)**

**typedef [u32](#)\* [pu32](#)**

**typedef [u64](#)\* [pu64](#)**

**typedef [u8](#)\* [pu8](#)**

Standard Pointer to Unsigned Byte/Word/Long\_Word

**typedef int16\_t [s16](#)**

**typedef int32\_t [s32](#)**

**typedef int64\_t [s64](#)**

**typedef int8\_t [s8](#)**

Standard Signed Byte/Word/Long\_Word

**typedef uint16\_t [u16](#)**

**typedef uint32\_t [u32](#)**

**typedef uint64\_t [u64](#)**

**typedef uint8\_t [u8](#)**

Data Types New Definitions Standard Unsigned Byte/Word/Long\_Word

---

## Enumeration Type Documentation

**enum [LBTY\\_tenuBoolean](#)**

Boolean type

**Enumerator:**

	<a href="#">LBTY_TRUE</a>	
	<a href="#">LBTY_FALSE</a>	

```
96 {
97     LBTY\_TRUE = 0x55,
98     LBTY\_FALSE = 0xAA
99 } LBTY\_tenuBoolean;
```

## enum [LBTY\\_tenuErrorStatus](#)

Error Return type

### Enumerator:

LBTY_OK	
LBTY_NOK	
LBTY_NULL_POINTER	
LBTY_INDEX_OUT_OF_RANGE	
LBTY_NO_MASTER_CHANNEL	
LBTY_READ_ERROR	
LBTY_WRITE_ERROR	
LBTY_UNDEFINED_ERROR	
LBTY_IN_PROGRESS	

```
102     {
103     LBTY\_OK = (u16)0,
104     LBTY\_NOK,
105     LBTY\_NULL\_POINTER,
106     LBTY\_INDEX\_OUT\_OF\_RANGE,
107     LBTY\_NO\_MASTER\_CHANNEL,
108     LBTY\_READ\_ERROR,
109     LBTY\_WRITE\_ERROR,
110     LBTY\_UNDEFINED\_ERROR,
111     LBTY\_IN\_PROGRESS          /* Error is not available, wait for availability */
112 } LBTY\_tenuErrorStatus;
```

## enum [LBTY\\_tenuFlagStatus](#)

Flag Status type

### Enumerator:

LBTY_RESET	
LBTY_SET	

```
90     {
91     LBTY\_RESET = 0,
92     LBTY\_SET = !LBTY\_RESET
93 } LBTY\_tenuFlagStatus;
```

## LBTY\_int.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name      : LBTY_int.h */
5 /* Author         : MAAM */
6 /* Version        : v01 */
7 /* date           : Mar 23, 2023 */
8 /* description    : Basic Library */
9 /* ***** */
10 /* ***** HEADER FILES INCLUDES ***** */
11 /* ***** */
12
13 #ifndef _LBTY_INT_H_
14 #define _LBTY_INT_H_
15
16 #include <stdint.h>
17
18 /* ***** */
19 /* ***** TYPE_DEF SECTION ***** */
20 /* ***** */
21
22 typedef uint8_t      u8 ;
23 typedef uint16_t     u16;
24 typedef uint32_t     u32;
25 typedef uint64_t     u64;
26
27
28
29 typedef int8_t       s8 ;
30 typedef int16_t      s16;
31 typedef int32_t      s32;
32 typedef int64_t      s64;
33
34
35 typedef float        f32;
36 typedef double       f64;
37
38
39 typedef u8*          pu8 ;
40 typedef u16*         pu16;
41 typedef u32*         pu32;
42 typedef u64*         pu64;
43
44
45 typedef s8*          ps8 ;
46 typedef s16*         ps16;
47 typedef s32*         ps32;
48 typedef s64*         ps64;
49
50
51 /* ***** */
52 /* ***** MACRO/DEFINE SECTION ***** */
53 /* ***** */
54
55 /***** */
56 #define __IO          volatile
57 #define __O           volatile
58 #define __I          volatile const
59 /***** */
60
61 #define LBTY_u8vidNOP()
62 #define LBTY_NULL      ((void *) 0U)
63
64 #define LBTY_u8ZERO     ((u8)0x00U)
65 #define LBTY_u8MAX      ((u8)0xFFU)
66 #define LBTY_s8MAX      ((s8)0x7F )
67 #define LBTY_s8MIN      ((s8)0x80 )
68
69 #define LBTY_u16ZERO    ((u16)0x0000U)
70 #define LBTY_u16MAX     ((u16)0xFFFFU)
71 #define LBTY_s16MAX     ((u16)0x7FFF )
72 #define LBTY_s16MIN     ((u16)0x8000 )
73
74
75 #define LBTY_u32ZERO    ((u32)0x00000000UL)
76 #define LBTY_u32MAX     ((u32)0xFFFFFFFFUL)
77 #define LBTY_s32MAX     ((u32)0x7FFFFFFF )
78 #define LBTY_s32MIN     ((u32)0x80000000L )
79
```

```

80 #define LBTY_u64ZERO      ((u64)0x0000000000000000ULL)
81 #define LBTY_u64MAX       ((u64)0xFFFFFFFFFFFFFFFFULL)
82 #define LBTY_s64MAX       ((u64)0x7FFFFFFFFFFFFFFFLL )
83 #define LBTY_s64MIN       ((u64)0x8000000000000000LL )
84
85 /* ***** */
86 /* ***** ENUM SECTION ***** */
87 /* ***** */
88
89 typedef enum {
90     LBTY_RESET = 0,
91     LBTY_SET = !LBTY_RESET
92 } LBTY_tenuFlagStatus;
93
94
95 typedef enum {
96     LBTY_TRUE = 0x55,
97     LBTY_FALSE = 0xAA
98 } LBTY_tenuBoolean;
99
100
101 typedef enum {
102     LBTY_OK = (u16)0,
103     LBTY_NOK,
104     LBTY_NULL_POINTER,
105     LBTY_INDEX_OUT_OF_RANGE,
106     LBTY_NO_MASTER_CHANNEL,
107     LBTY_READ_ERROR,
108     LBTY_WRITE_ERROR,
109     LBTY_UNDEFINED_ERROR,
110     LBTY_IN_PROGRESS /* Error is not available, wait for availability */
111 } LBTY_tenuErrorStatus;
112
113
114 /* ***** */
115 /* ***** STRUCT SECTION ***** */
116 /* ***** */
117
118 typedef union {
119     struct {
120         u8 m u8b0 :1; // LSB
121         u8 m u8b1 :1;
122         u8 m u8b2 :1;
123         u8 m u8b3 :1;
124         u8 m u8b4 :1;
125         u8 m u8b5 :1;
126         u8 m u8b6 :1;
127         u8 m u8b7 :1; // MSB
128     } sBits;
129     u8 u u8Byte;
130 } LBTY_tuniPort8;
131
132
133 typedef union {
134     struct {
135         u8 m u8b0 :1; // LSB
136         u8 m u8b1 :1;
137         u8 m u8b2 :1;
138         u8 m u8b3 :1;
139         u8 m u8b4 :1;
140         u8 m u8b5 :1;
141         u8 m u8b6 :1;
142         u8 m u8b7 :1;
143         u8 m u8b8 :1;
144         u8 m u8b9 :1;
145         u8 m u8b10 :1;
146         u8 m u8b11 :1;
147         u8 m u8b12 :1;
148         u8 m u8b13 :1;
149         u8 m u8b14 :1;
150         u8 m u8b15 :1; // MSB
151     } sBits;
152     struct {
153         u8 m u8low;
154         u8 m u8high;
155     } sBytes;
156     u16 u u16Word;
157 } LBTY_tuniPort16;
158
159 /* ***** */
160 /* ***** FUNCTION SECTION ***** */

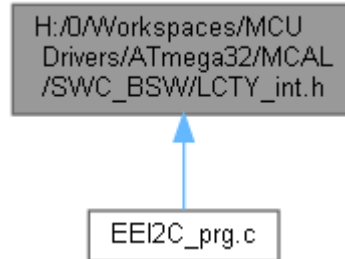
```

```
161 /* ***** */
162
163
164 #endif /* _LBTY_INT_H_ */
165 /***** E N D (LBTY_int.h) *****/
```



## H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/LCTY\_int.h File Reference

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



### Macros

- #define [LCTY\\_PROGMEM](#) \_\_attribute\_\_((\_\_progmem\_\_))
- #define [LCTY\\_PURE](#) \_\_attribute\_\_((\_\_pure\_\_))
- #define [LCTY\\_INLINE](#) \_\_attribute\_\_((always\_inline)) static inline
- #define [LCTY\\_INTERRUPT](#) \_\_attribute\_\_((interrupt))
- #define [CTY\\_PACKED](#) \_\_attribute\_\_((\_\_packed\_\_))
- #define [LCTY\\_CONST](#) \_\_attribute\_\_((\_\_const\_\_))
- #define [LCTY\\_DPAGE](#) \_\_attribute\_\_((dp))
- #define [LCTY\\_NODPAGE](#) \_\_attribute\_\_((nodp))
- #define [LCTY\\_SECTION](#)(section) \_\_attribute\_\_((section( # section)))
- #define [LCTY\\_ASM](#)(cmd) \_\_asm\_\_ \_\_volatile\_\_ ( # cmd ::)

---

### Macro Definition Documentation

**#define CTY\_PACKED \_\_attribute\_\_((\_\_packed\_\_))**

**#define LCTY\_ASM( cmd) \_\_asm\_\_ \_\_volatile\_\_ ( # cmd ::)**

**#define LCTY\_CONST \_\_attribute\_\_((\_\_const\_\_))**

**#define LCTY\_DPAGE \_\_attribute\_\_((dp))**

**#define LCTY\_INLINE \_\_attribute\_\_((always\_inline)) static inline**

**#define LCTY\_INTERRUPT \_\_attribute\_\_((interrupt))**

**#define LCTY\_NODPAGE \_\_attribute\_\_((nodp))**

**#define LCTY\_PROGMEM \_\_attribute\_\_((\_\_progmem\_\_))**

**#define LCTY\_PURE \_\_attribute\_\_((\_\_pure\_\_))**

**#define LCTY\_SECTION( section) \_\_attribute\_\_((section( # section)))**

## LCTY\_int.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name : LCTY_int.h */
5 /* Author : MAAM */
6 /* Version : v00 */
7 /* date : Apr 26, 2023 */
8 /* description : Compiler Library */
9 /* ***** */
10 /* ***** HEADER FILES INCLUDES ***** */
11 /* ***** */
12
13 #ifndef LCTY_INT_H_
14 #define LCTY_INT_H_
15
16 /* ***** */
17 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
18 /* ***** */
19
20 /* ***** */
21 /* ***** MACRO/DEFINE SECTION ***** */
22 /* ***** */
23
24 /* prog memory attribute */
25 #define LCTY_PROGMEM __attribute__((__progmem__))
26
27 /* pure attribute */
28 #define LCTY_PURE __attribute__((__pure__))
29
30 /* Abstraction for inlining */
31 // #define LCTY_INLINE static inline
32 #define LCTY_INLINE __attribute__((always_inline)) static inline
33
34 /* define function as interrupt handler */
35 #define LCTY_INTERRUPT __attribute__((interrupt))
36
37 /* Memory packed to pass Memory padding */
38 #define CTY_PACKED __attribute__((__packed__))
39
40 /* Const attribute */
41 #define LCTY_CONST __attribute__((__const__))
42
43 /* place variable in direct page */
44 #define LCTY_DPAGE __attribute__((dp))
45
46 /* do not place variable in direct page */
47 #define LCTY_NODPAGE __attribute__((nodp))
48
49 /* Sections */
50 #define LCTY_SECTION(section) __attribute__((section( # section)))
51
52 /* Abstraction for assembly command */
53 #define LCTY_ASM(cmd) __asm__ __volatile__ ( # cmd ::)
54
55 /* ***** */
56 /* ***** CONST SECTION ***** */
57 /* ***** */
58
59 /* ***** */
60 /* ***** VARIABLE SECTION ***** */
61 /* ***** */
62
63 /* ***** */
64 /* ***** FUNCTION SECTION ***** */
65 /* ***** */
66
67
68 #endif /* LCTY_INT_H_ */
69 /***** E N D (LCTY_int.h) *****/
```