SWC_WDT

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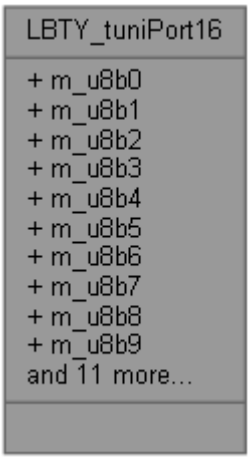
Data Structure Documentation

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

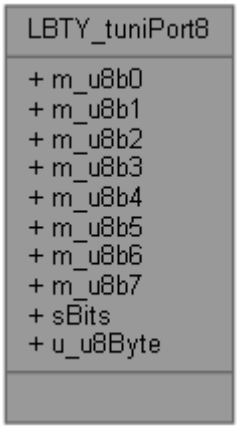
The documentation for this union was generated from the following file:

- 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:

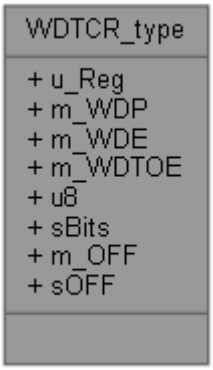
- H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC_BSW/LBTY_int.h

WDTCR_type Union Reference

: Type define of Union bit field of "Watchdog Control Register"

```
#include <WDT_priv.h>
```

Collaboration diagram for WDTCR_type:



Data Fields

- u8 u_Reg
- struct {
- __IO u8 m_WDP: 3
- __IO u8 m_WDE: 1
- __IO u8 m_WDTOE: 1
- __IO u8: 3
- } sBits
- struct {
- __IO u8: 3
- __IO u8 m_OFF: 2
- } sOFF

Detailed Description

: Type define of Union bit field of "Watchdog Control Register"

Type : Union **Unit** : None

Field Documentation

__IO u8 m_OFF

Watchdog Turn-off

__IO u8 m_WDE

Watchdog Enable

__IO u8 **m_WDP**

Watchdog Timer Prescaler

__IO u8 **m_WDTOE**

Watchdog Turn-off Enable

struct { ... } sBits

struct { ... } sOFF

__IO u8

Reversed

u8 **u_Reg**

Byte

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

File Documentation

H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC_BSW/LBIT_int.h File Reference

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))
```

LBIT_int.h

Go to the documentation of this file.

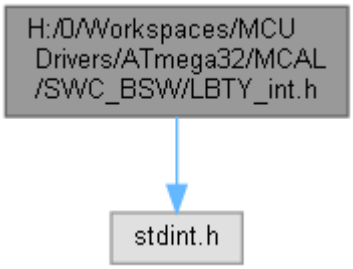
```
1 /*
**************************************************************************** */
2 /* ********************** FILE DEFINITION SECTION ************************** */
3 /* ************************************************************************** */
4 /* File Name    : LBIT_int.h                                                  */
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
27 #define SET_BIT(REG, bit)                                 ((REG) |=  (1u<<(bit)))
28 #define CLR_BIT(REG, bit)                                 ((REG) &= ~(1u<<(bit)))
29 #define TOG_BIT(REG, bit)                                 ((REG) ^=  (1u<<(bit)))
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                                                            REG &= ~(0x01u<<bit);
\
55                                                            REG |=  ((value & 0x01u)<<bit);
\
56                                                           }while(0)
57 */
58
59 /*           bits together in an u8 register           */
60 #define CON_u8Bits(b7, b6, b5, b4, b3, b2, b1, b0)
\
61
(0b##b7##b6##b5##b4##b3##b2##b1##b0)
62
63 /*           bits together in an u16 register          */
64 #define CON_u16Bits(b15, b14, b13, b12, b11, b10, b9, b8, b7, b6, b5, b4, b3, b2, b1,
b0)   \
```

```
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) ******************************/
```

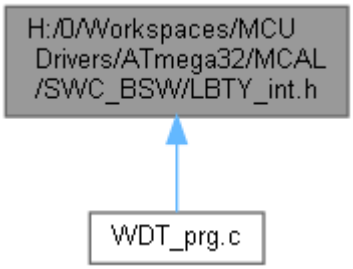
H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC_BSW/LBTY_int.h File Reference

```
#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_tuniPort8union 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)0x7FFFFFFFFFFFFFFFLL)
- #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)0x7FFFFFFFFFFFFFFFLL)

#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:

LBTY_TRUE	
LBTY_FALSE	

```
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.

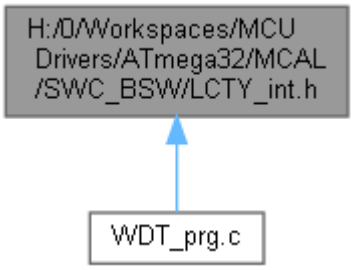
```
1 /*
2 /* ********************** FILE DEFINITION SECTION ************************** */
3 /* ************************************************************************* */
4 /* File Name   : LBTY_int.h                                                  */
5 /* Author      : MAAM                                                        */
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
24 typedef uint8_t     u8 ;
25 typedef uint16_t    u16;
26 typedef uint32_t    u32;
27 typedef uint64_t    u64;
28
30 typedef int8_t      s8 ;
31 typedef int16_t     s16;
32 typedef int32_t     s32;
33 typedef int64_t     s64;
34
36 typedef float       f32;
37 typedef double      f64;
38
40 typedef u8*         pu8 ;
41 typedef u16*        pu16;
42 typedef u32*        pu32;
43 typedef u64*        pu64;
44
46 typedef s8*         ps8 ;
47 typedef s16*        ps16;
48 typedef s32*        ps32;
49 typedef s64*        ps64;
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
65 #define LBTY_u8ZERO     ((u8)0x00U)
66 #define LBTY_u8MAX      ((u8)0xFFU)
67 #define LBTY_s8MAX      ((s8)0x7F )
68 #define LBTY_s8MIN      ((s8)0x80 )
69
70 #define LBTY_u16ZERO    ((u16)0x0000U)
71 #define LBTY_u16MAX     ((u16)0xFFFFU)
72 #define LBTY_s16MAX     ((u16)0x7FFF )
73 #define LBTY_s16MIN     ((u16)0x8000 )
74
75 #define LBTY_u32ZERO    ((u32)0x00000000UL)
76 #define LBTY_u32MAX     ((u32)0xFFFFFFFFUL)
77 #define LBTY_s32MAX     ((u32)0x7FFFFFFFL )
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
90 typedef enum {
91     LBTY_RESET = 0,
92     LBTY_SET = !LBTY_RESET
93 } LBTY_tenuFlagStatus;
94
96 typedef enum {
97   LBTY_TRUE = 0x55,
98   LBTY_FALSE = 0xAA
99 } LBTY_tenuBoolean;
100
102 typedef enum {
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;
113
114 /* ********************************************************************************* */
115 /* ****************************** STRUCT SECTION ************************************ */
116 /* ********************************************************************************* */
117
119 typedef union {
120   struct {
121     u8 m_u8b0 :1;       // LSB
122     u8 m_u8b1 :1;
123     u8 m_u8b2 :1;
124     u8 m_u8b3 :1;
125     u8 m_u8b4 :1;
126     u8 m_u8b5 :1;
127     u8 m_u8b6 :1;
128     u8 m_u8b7 :1;       // MSB
129   } sBits;
130   u8 u_u8Byte;
131 } LBTY_tuniPort8;
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

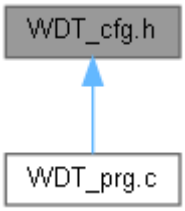
Go to the documentation of this file.

```
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) ****************************/
```

main.c File Reference

WDT_cfg.h File Reference

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



Macros

- #define WDT_VCC 5u
- #define WDT_TIME_OUT WDT_TimeOut_1000ms

Macro Definition Documentation

#define WDT_TIME_OUT WDT_TimeOut_1000ms

#define WDT_VCC 5u

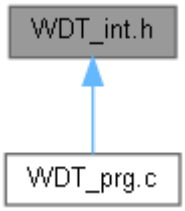
WDT_cfg.h

Go to the documentation of this file.

```
1 /*
**************************************************************************** */
2 /* ********************** FILE DEFINITION SECTION ************************** */
3 /* ************************************************************************** */
4 /* File Name   : WDT_cfg.h                                                    */
5 /* Author      : MAAM                                                         */
6 /* Version     : v01.2                                                        */
7 /* date        : May 1, 2023                                                  */
8 /* ************************************************************************** */
9 /* ************************ HEADER FILES INCLUDES ************************  */
10 /* **************************************************************************** */
11
12 #ifndef WDT_CFG_H_
13 #define WDT_CFG_H_
14
15 /* **************************************************************************** */
16 /* ********************** TYPE_DEF/STRUCT/ENUM SECTION ********************** */
17 /* **************************************************************************** */
18
19 /* **************************************************************************** */
20 /* ************************** MACRO/DEFINE SECTION ************************** */
21 /* **************************************************************************** */
22
23 #define WDT_VCC             5u
24 #define WDT_TIME_OUT        WDT_TimeOut_1000ms
25
26 /* **************************************************************************** */
27 /* ****************************** CONST SECTION ******************************* */
28 /* **************************************************************************** */
29
30 /* **************************************************************************** */
31 /* ***************************** VARIABLE SECTION ***************************** */
32 /* **************************************************************************** */
33
34 /* **************************************************************************** */
35 /* ***************************** FUNCTION SECTION ***************************** */
36 /* **************************************************************************** */
37
38
39 #endif /* WDT_CFG_H_ */
40 /*************************** E N D (WDT_cfg.h) ****************************/
```

WDT_int.h File Reference

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



Enumerations

- enum WDT_tenumTimeOut

Functions

- void WDT_vidInit (void)
- void WDT_vidSleep (u8 u8Period)
- void WDT_vidReset (void)
- void WDT_vidEnable (void)
- void WDT_vidDisable (void)

Enumeration Type Documentation

enum WDT_tenumTimeOut

```
19             {
20 #if WDT_VCC == 3u
21     WDT_TimeOut_17_1ms = (u8)0u,
22     WDT_TimeOut_34_3ms,
23     WDT_TimeOut_68_5ms,
24     WDT_TimeOut_140ms,
25     WDT_TimeOut_270ms,
26     WDT_TimeOut_550ms,
27     WDT_TimeOut_1100ms,
28     WDT_TimeOut_2200ms
29 #elif WDT_VCC == 5u
30     WDT_TimeOut_16_3ms = (u8)0u,
31     WDT_TimeOut_32_5ms,
32     WDT_TimeOut_65ms,
33     WDT_TimeOut_130ms,
34     WDT_TimeOut_260ms,
35     WDT_TimeOut_520ms,
36     WDT_TimeOut_1000ms,
37     WDT_TimeOut_2100ms
38 #endif
39 }WDT_tenumTimeOut;
```

Function Documentation

void WDT_vidDisable (void)

```
88                          {
89 //  S_WDTCR->sBits.m_WDE   = LBTY_SET;
90 //  S_WDTCR->sBits.m_WDTOE = LBTY_SET;
91     /* Write logical one to WDTOE and WDE */
92     S_WDTCR->sOFF.m_OFF = 3u;
93     /* Turn off WDT */
94     S_WDTCR->u_Reg  = LBTY_RESET;
95 }
```

Here is the caller graph for this function:

void WDT_vidEnable (void)

```
79                              {
80      S_WDTCR->sBits.m_WDE = LBTY_SET;
81  }
```

void WDT_vidInit (void)

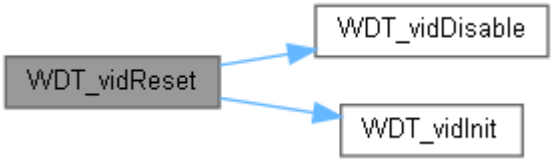
```
46                              {
47      S_WDTCR->sBits.m_WDE    = LBTY_SET;
48      S_WDTCR->sBits.m_WDTOE  = LBTY_RESET;
49      S_WDTCR->sBits.m_WDP    = WDT_TIME_OUT;
50  }
```

Here is the caller graph for this function:

void WDT_vidReset (void)

```
66                              {
67      wdr();  /* reset WDT */
68  //  while(!S_MCUCSR->sBits.m_WDRF);
69  //  S_MCUCSR->sBits.m_WDRF = LBTY_RESET;
70      WDT_vidDisable();
71      WDT_vidInit();
72  }
```

Here is the call graph for this function:



void WDT_vidSleep (u8 *u8Period*)

```
57                                  {
58      S_WDTCR->sBits.m_WDP    = u8Period;
59  }
```

WDT_int.h

Go to the documentation of this file.

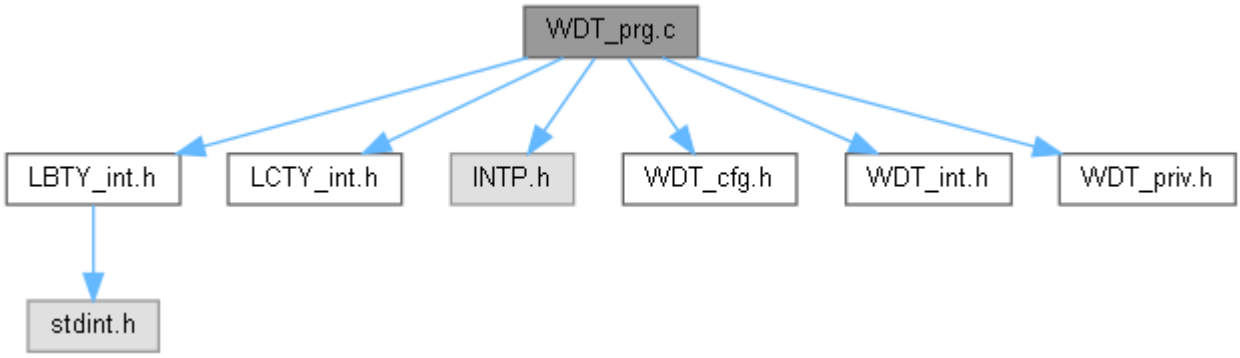
```c
/*
 ******************************************************************************* */
/* ********************** FILE DEFINITION SECTION ************************** */
/* ******************************************************************************* */
/* File Name    : WDT_int.h                                                      */
/* Author       : MAAM                                                           */
/* Version      : v01.2                                                          */
/* date         : May 1, 2023                                                    */
/* ******************************************************************************* */
/* ************************ HEADER FILES INCLUDES ************************  */
/* ******************************************************************************* */

#ifndef WDT_INT_H_
#define WDT_INT_H_

/* ******************************************************************************* */
/* ********************** TYPE_DEF/STRUCT/ENUM SECTION ********************** */
/* ******************************************************************************* */

typedef enum{
#if WDT_VCC == 3u
    WDT_TimeOut_17_1ms = (u8)0u,
    WDT_TimeOut_34_3ms,
    WDT_TimeOut_68_5ms,
    WDT_TimeOut_140ms,
    WDT_TimeOut_270ms,
    WDT_TimeOut_550ms,
    WDT_TimeOut_1100ms,
    WDT_TimeOut_2200ms
#elif WDT_VCC == 5u
    WDT_TimeOut_16_3ms = (u8)0u,
    WDT_TimeOut_32_5ms,
    WDT_TimeOut_65ms,
    WDT_TimeOut_130ms,
    WDT_TimeOut_260ms,
    WDT_TimeOut_520ms,
    WDT_TimeOut_1000ms,
    WDT_TimeOut_2100ms
#endif
}WDT_tenumTimeOut;

/* ******************************************************************************* */
/* ************************** MACRO/DEFINE SECTION ************************** */
/* ******************************************************************************* */

/* ******************************************************************************* */
/* ***************************** CONST SECTION ***************************** */
/* ******************************************************************************* */

/* ******************************************************************************* */
/* ***************************** VARIABLE SECTION ************************** */
/* ******************************************************************************* */

/* ******************************************************************************* */
/* ***************************** FUNCTION SECTION ************************** */
/* ******************************************************************************* */

/* ******************************************************************************* */
/* Description :    Initialization of the WDT                                      */
/* Input       :    void                                                           */
/* Return      :    void                                                           */
/* ******************************************************************************* */
extern void WDT_vidInit(void);

/* ******************************************************************************* */
/* Description :    WDT Sleep                                                      */
/* Input       :    u8Period                                                       */
/* Return      :    void                                                           */
/* ******************************************************************************* */
extern void WDT_vidSleep(u8 u8Period);

/* ******************************************************************************* */
/* Description :    WDT Reset                                                      */
```

```
/* Input       :    void                                                    */
/* Return      :    void                                                    */
/* ************************************************************************ */
extern void WDT_vidReset(void);

/* ************************************************************************ */
/* Description :    WDT Enable                                              */
/* Input       :    void                                                    */
/* Return      :    void                                                    */
/* ************************************************************************ */
extern void WDT_vidEnable(void);

/* ************************************************************************ */
/* Description :    WDT Disable                                             */
/* Input       :    void                                                    */
/* Return      :    void                                                    */
/* ************************************************************************ */
extern void WDT_vidDisable(void);


#endif /* WDT_INT_H_ */
/*************************** E N D (WDT_int.h) ****************************/
```

WDT_prg.c File Reference

```
#include "LBTY_int.h"
#include "LCTY_int.h"
#include "INTP.h"
#include "WDT_cfg.h"
#include "WDT_int.h"
#include "WDT_priv.h"
```

Include dependency graph for WDT_prg.c:



Functions

- void WDT_vidInit (void)
- void WDT_vidSleep (u8 u8Period)
- void WDT_vidReset (void)
- void WDT_vidEnable (void)
- void WDT_vidDisable (void)

Function Documentation

void WDT_vidDisable (void)

```
88                              {
89 //  S_WDTCR->sBits.m_WDE   = LBTY_SET;
90 //  S_WDTCR->sBits.m_WDTOE = LBTY_SET;
91     /* Write logical one to WDTOE and WDE */
92     S_WDTCR->sOFF.m_OFF = 3u;
93     /* Turn off WDT */
94     S_WDTCR->u_Reg  = LBTY_RESET;
95 }
```

Here is the caller graph for this function:

void WDT_vidEnable (void)

```
79                              {
80     S_WDTCR->sBits.m_WDE = LBTY_SET;
81 }
```

void WDT_vidInit (void)

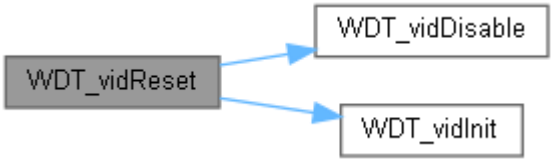
```
46                              {
47     S_WDTCR->sBits.m_WDE   = LBTY_SET;
48     S_WDTCR->sBits.m_WDTOE = LBTY_RESET;
49     S_WDTCR->sBits.m_WDP   = WDT_TIME_OUT;
50 }
```

Here is the caller graph for this function:

void WDT_vidReset (void)

```
66                          {
67     wdr();  /* reset WDT */
68 //  while(!S_MCUCSR->sBits.m_WDRF);
69 //  S_MCUCSR->sBits.m_WDRF = LBTY_RESET;
70     WDT_vidDisable();
71     WDT_vidInit();
72 }
```

Here is the call graph for this function:

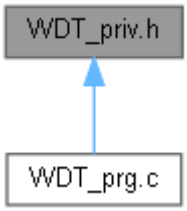


void WDT_vidSleep (u8 *u8Period*)

```
57                                  {
58     S_WDTCR->sBits.m_WDP    = u8Period;
59 }
```

WDT_priv.h File Reference

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



Data Structures

union WDTCR_type: *Type define of Union bit field of "Watchdog Control Register"*

Macros

- #define S_WDTCR ((WDTCR_type* const)0x41U)
- #define WDTCR (*(volatile u8* const)0x41U)

Macro Definition Documentation

#define S_WDTCR ((WDTCR_type* const)0x41U)

Watchdog Control Register

#define WDTCR (*(volatile u8* const)0x41U)

WDT_priv.h

Go to the documentation of this file.

```
1 /*
2 /* ********************** FILE DEFINITION SECTION ************************** */
3 /* ************************************************************************* */
4 /* File Name    : WDT_priv.h                                                 */
5 /* Author       : MAAM                                                       */
6 /* Version      : v01.2                                                      */
7 /* date         : May 17, 2023                                               */
8 /* ************************************************************************* */
9 /* ************************ HEADER FILES INCLUDES ************************  */
10 /* ************************************************************************* */
11
12 #ifndef WDT_PRIV_H_
13 #define WDT_PRIV_H_
14
15 /* ************************************************************************* */
16 /* ********************** TYPE_DEF/STRUCT/ENUM SECTION ********************** */
17 /* ************************************************************************* */
18
21 typedef union{
22     u8 u_Reg;
23     struct {
24         __IO u8 m_WDP  : 3;
25         __IO u8 m_WDE  : 1;
26         __IO u8 m_WDTOE: 1;
27         __IO u8        : 3;
28     }sBits;
29     struct {
30         __IO u8        : 3;
31         __IO u8 m_OFF  : 2;
32         __IO u8        : 3;
33     }sOFF;
34 }WDTCR_type;
35
36 /* ************************************************************************* */
37 /* ************************** MACRO/DEFINE SECTION ************************** */
38 /* ************************************************************************* */
39
41 #define S_WDTCR          ((WDTCR_type* const)0x41U)
42 #define WDTCR            (*(volatile u8* const)0x41U)
43
44 /* ************************************************************************* */
45 /* ***************************** CONST SECTION ***************************** */
46 /* ************************************************************************* */
47
48 /* ************************************************************************* */
49 /* ***************************** VARIABLE SECTION ************************** */
50 /* ************************************************************************* */
51
52 /* ************************************************************************* */
53 /* ***************************** FUNCTION SECTION ************************** */
54 /* ************************************************************************* */
55
56
57 #endif /* WDT_PRIV_H  */
58 /*************************** E N D (WDT_priv.h) ****************************/
```