

# **SWC\_PUSH**

Version v1.0

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# Data Structure Index

## Data Structures

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# File Index

## File List

Here is a list of all files with brief descriptions:

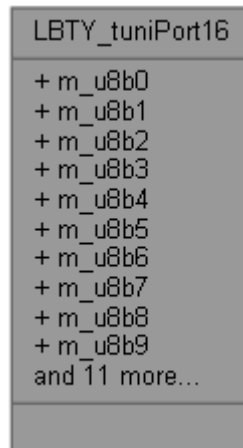
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# Data Structure Documentation

## 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:

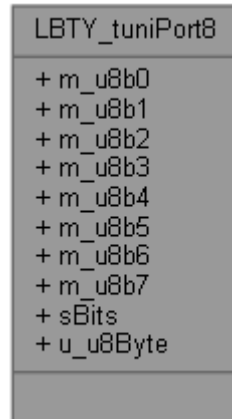
- H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/[LBTY\\_int.h](#)



## 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:

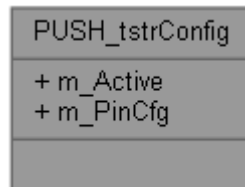
- H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/[LBTY\\_int.h](#)

## PUSH\_tstrConfig Struct Reference

: type define of structure for GPIO Push Configuration

```
#include <PUSH_int.h>
```

Collaboration diagram for PUSH\_tstrConfig:



### Data Fields

- [PUSH\\_tenuActive](#) [m\\_Active](#)
- [GPIO\\_tstrPinConfig](#) [m\\_PinCfg](#)

---

### Detailed Description

: type define of structure for GPIO Push Configuration

**Type** : struct **Unit** : None

---

### Field Documentation

[PUSH\\_tenuActive](#) **m\_Active**

Push Active

**GPIO\_tstrPinConfig** **m\_PinCfg**

Pin Configuration

---

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

[PUSH\\_int.h](#)

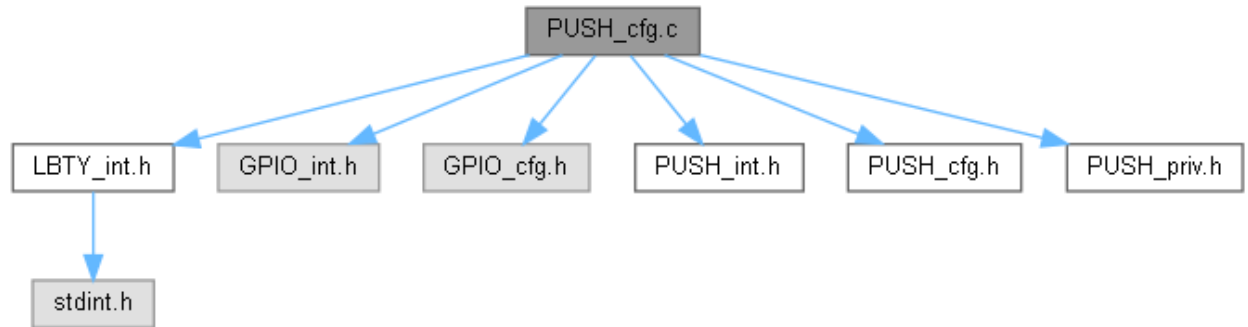
# **File Documentation**

## **main.c File Reference**

## PUSH\_cfg.c File Reference

```
#include "LBTY_int.h"
#include "GPIO_int.h"
#include "GPIO_cfg.h"
#include "PUSH_int.h"
#include "PUSH_cfg.h"
#include "PUSH_priv.h"
```

Include dependency graph for PUSH\_cfg.c:



## Variables

- const [PUSH\\_tstrConfig](#) [kau8PushConfiguration\\_LGB](#) [[PUSH\\_Num](#)]

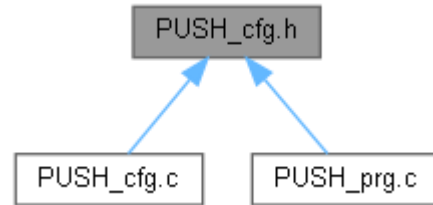
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## Variable Documentation

const [PUSH\\_tstrConfig](#) [kau8PushConfiguration\\_LGB](#) [[PUSH\\_Num](#)]

## PUSH\_cfg.h File Reference

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



### Macros

- `#define PUSH0 0`
  - `#define PUSH0\_PORT D`
  - `#define PUSH0\_PIN GPIO_INT0`
  - `#define PUSH0\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH1 1`
  - `#define PUSH1\_PORT D`
  - `#define PUSH1\_PIN GPIO_INT1`
  - `#define PUSH1\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH2 2`
  - `#define PUSH2\_PORT B`
  - `#define PUSH2\_PIN GPIO_INT2`
  - `#define PUSH2\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH3 3`
  - `#define PUSH3\_PORT B`
  - `#define PUSH3\_PIN AMIT_B0`
  - `#define PUSH3\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH4 4`
  - `#define PUSH4\_PORT B`
  - `#define PUSH4\_PIN AMIT_B4`
  - `#define PUSH4\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH5 5`
  - `#define PUSH5\_PORT B`
  - `#define PUSH5\_PIN AMIT_B5`
  - `#define PUSH5\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH6 6`
  - `#define PUSH6\_PORT B`
  - `#define PUSH6\_PIN AMIT_B6`
  - `#define PUSH6\_ACTIVE PUSH\_Active\_High`
  - `#define PUSH7 7`
  - `#define PUSH7\_PORT B`
  - `#define PUSH7\_PIN AMIT_B7`
  - `#define PUSH7\_ACTIVE PUSH\_Active\_High`
  - `#define DEBOUNCING\_CYCLES\_NUM 5`
  - `#define DEBOUNCING\_DELAY 5`
-

## Macro Definition Documentation

**#define DEBOUNCING\_CYCLES\_NUM 5**

**#define DEBOUNCING\_DELAY 5**

**#define PUSH0 0**

**#define PUSH0\_ACTIVE [PUSH Active High](#)**

**#define PUSH0\_PIN GPIO\_INT0**

**#define PUSH0\_PORT D**

**#define PUSH1 1**

**#define PUSH1\_ACTIVE [PUSH Active High](#)**

**#define PUSH1\_PIN GPIO\_INT1**

**#define PUSH1\_PORT D**

**#define PUSH2 2**

**#define PUSH2\_ACTIVE [PUSH Active High](#)**

**#define PUSH2\_PIN GPIO\_INT2**

**#define PUSH2\_PORT B**

**#define PUSH3 3**

**#define PUSH3\_ACTIVE [PUSH Active High](#)**

**#define PUSH3\_PIN AMIT\_B0**

**#define PUSH3\_PORT B**

**#define PUSH4 4**

**#define PUSH4\_ACTIVE [PUSH Active High](#)**

**#define PUSH4\_PIN AMIT\_B4**

**#define PUSH4\_PORT B**

**#define PUSH5 5**

**#define PUSH5\_ACTIVE [PUSH Active High](#)**

**#define PUSH5\_PIN AMIT\_B5**

```
#define PUSH5_PORT B

#define PUSH6 6

#define PUSH6_ACTIVE PUSH Active High

#define PUSH6_PIN AMIT_B6

#define PUSH6_PORT B

#define PUSH7 7

#define PUSH7_ACTIVE PUSH Active High

#define PUSH7_PIN AMIT_B7

#define PUSH7_PORT B
```



## PUSH\_cfg.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name      : PUSH_cfg.h */
5 /* Author         : MAAM */
6 /* Version        : v01.2 */
7 /* date           : Mar 30, 2023 */
8 /* ***** */
9 /* ***** HEADER FILES INCLUDES ***** */
10 /* ***** */
11
12 #ifndef PUSH_CFG_H_
13 #define PUSH_CFG_H_
14
15 /* ***** */
16 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
17 /* ***** */
18
19 /* ***** */
20 /* ***** MACRO/DEFINE SECTION ***** */
21 /* ***** */
22
23 #if defined(AMIT_KIT)
24
25 #define PUSH0          0
26 #define PUSH0_PORT     D
27 #define PUSH0_PIN      AMIT_PUSH0
28 #define PUSH0_ACTIVE   PUSH_Active_High
29
30 #define PUSH1          1
31 #define PUSH1_PORT     D
32 #define PUSH1_PIN      AMIT_PUSH1
33 #define PUSH1_ACTIVE   PUSH_Active_High
34
35 #define PUSH2          2
36 #define PUSH2_PORT     D
37 #define PUSH2_PIN      AMIT_PUSH2
38 #define PUSH2_ACTIVE   PUSH_Active_High
39
40 #elif defined(ETA32_KIT)
41
42 #define PUSH0          0
43 #define PUSH0_PORT     D
44 #define PUSH0_PIN      Eta32_Keypad_col0
45 #define PUSH0_ACTIVE   PUSH_Active_Low
46
47 #define PUSH1          1
48 #define PUSH1_PORT     D
49 #define PUSH1_PIN      Eta32_Keypad_col1
50 #define PUSH1_ACTIVE   PUSH_Active_Low
51
52 #define PUSH2          2
53 #define PUSH2_PORT     D
54 #define PUSH2_PIN      Eta32_Keypad_col2
55 #define PUSH2_ACTIVE   PUSH_Active_Low
56
57 #define PUSH3          3
58 #define PUSH3_PORT     D
59 #define PUSH3_PIN      Eta32_Keypad_col3
60 #define PUSH3_ACTIVE   PUSH_Active_Low
61
62 #elif defined(ETA32_MINI_KIT)
63
64 #define PUSH0          0
65 #define PUSH0_PORT     D
66 #define PUSH0_PIN      Eta32_mini_Keypad_col0
67 #define PUSH0_ACTIVE   PUSH_Active_Low
68
69 #define PUSH1          1
70 #define PUSH1_PORT     D
71 #define PUSH1_PIN      Eta32_mini_Keypad_col1
72 #define PUSH1_ACTIVE   PUSH_Active_Low
```

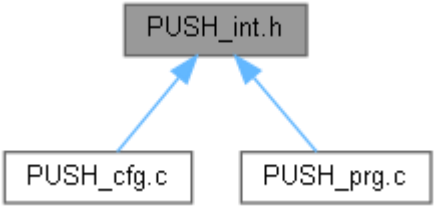
```

73
74 #define PUSH2                2
75 #define PUSH2_PORT           D
76 #define PUSH2_PIN            Eta32_mini_Keypad_col2
77 #define PUSH2_ACTIVE         PUSH_Active_Low
78
79 #define PUSH3                3
80 #define PUSH3_PORT           D
81 #define PUSH3_PIN            Eta32_mini_Keypad_col3
82 #define PUSH3_ACTIVE         PUSH_Active_Low
83
84 #else
85
86 #define PUSH0                0
87 #define PUSH0_PORT           D
88 #define PUSH0_PIN            GPIO_INT0
89 #define PUSH0_ACTIVE         PUSH_Active_High
90
91 #define PUSH1                1
92 #define PUSH1_PORT           D
93 #define PUSH1_PIN            GPIO_INT1
94 #define PUSH1_ACTIVE         PUSH_Active_High
95
96 #define PUSH2                2
97 #define PUSH2_PORT           B
98 #define PUSH2_PIN            GPIO_INT2
99 #define PUSH2_ACTIVE         PUSH_Active_High
100
101 #define PUSH3                3
102 #define PUSH3_PORT           B
103 #define PUSH3_PIN            AMIT_B0
104 #define PUSH3_ACTIVE         PUSH_Active_High
105
106 #define PUSH4                4
107 #define PUSH4_PORT           B
108 #define PUSH4_PIN            AMIT_B4
109 #define PUSH4_ACTIVE         PUSH_Active_High
110
111 #define PUSH5                5
112 #define PUSH5_PORT           B
113 #define PUSH5_PIN            AMIT_B5
114 #define PUSH5_ACTIVE         PUSH_Active_High
115
116 #define PUSH6                6
117 #define PUSH6_PORT           B
118 #define PUSH6_PIN            AMIT_B6
119 #define PUSH6_ACTIVE         PUSH_Active_High
120
121 #define PUSH7                7
122 #define PUSH7_PORT           B
123 #define PUSH7_PIN            AMIT_B7
124 #define PUSH7_ACTIVE         PUSH_Active_High
125
126 #endif
127
128 #define DEBOUNCING_CYCLES_NUM    5
129 #define DEBOUNCING_DELAY        5
130
131 /* ***** */
132 /* ***** CONST SECTION ***** */
133 /* ***** */
134
135 /* ***** */
136 /* ***** VARIABLE SECTION ***** */
137 /* ***** */
138
139 /* ***** */
140 /* ***** FUNCTION SECTION ***** */
141 /* ***** */
142
143
144 #endif /* PUSH_CFG_H */
145 /***** E N D (PUSH_cfg.h) *****/

```

# PUSH\_int.h File Reference

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



## Data Structures

struct [PUSH\\_tstrConfig](#): type define of structure for GPIO Push Configuration

## Enumerations

- enum [PUSH\\_tenuActive](#) { [PUSH\\_Active\\_Low](#) = (u8)0u, [PUSH\\_Active\\_High](#) }
- enum [PUSH\\_tenuStatus](#) { [PUSH\\_RELEASED](#) = (u8)0u, [PUSH\\_PRESSED](#) }

## Functions

- void [PUSH\\_vidInit](#) (u8 u8PushNum)
- void [PUSH\\_vidInitAll](#) (void)
- [LBTY\\_tenuErrorStatus](#) [PUSH\\_u8GetDebounce](#) (u8 u8PushNum, u8 \*pu8State)
- [LBTY\\_tenuErrorStatus](#) [PUSH\\_u8GetPushState](#) (u8 u8PushNum, u8 \*pu8State)

## Enumeration Type Documentation

enum [PUSH\\_tenuActive](#)

Enumerator:

PUSH_Active_Lo w	
PUSH_Active_Hig h	

```
19 {
20     PUSH\_Active\_Low = (u8)0u,
21     PUSH\_Active\_High
22 } PUSH\_tenuActive;
```

enum [PUSH\\_tenuStatus](#)

Enumerator:

PUSH_RELEASE D	
PUSH_PRESSED	

```
24 {
25     PUSH\_RELEASED = (u8)0u,
26     PUSH\_PRESSED
27 } PUSH\_tenuStatus;
```

## Function Documentation

### LBTY\_tenuErrorStatus PUSH\_u8GetDebounce (u8 u8PushNum, u8\* pu8State)

```
72                                     {
73     u8 u8PreValue = LBTY_u8ZERO;
74     u8 u8CurValue = LBTY_u8ZERO;
75     u8 u8DebouncingCount = LBTY_u8ZERO;
76
77     PUSH_tstrConfig* pstrPush =
78         (PUSH_tstrConfig*)&kau8PushConfiguration_LGB[u8PushNum];
79     LBTY_tenuErrorStatus u8RetValue =
80         GPIO_u8GetPinValue(pstrPush->m_PinCfg.m_Port,
81 pstrPush->m_PinCfg.m_Pin, &u8PreValue);
82     while((u8DebouncingCount < DEBOUNCING_CYCLES_NUM) && (u8RetValue == LBTY_OK)) {
83         vidMyDelay ms(DEBOUNCING_DELAY);
84         u8RetValue = GPIO_u8GetPinValue(pstrPush->m_PinCfg.m_Port,
85 pstrPush->m_PinCfg.m_Pin, &u8CurValue);
86         if(u8PreValue == u8CurValue){
87             u8DebouncingCount++;
88         }else{
89             u8DebouncingCount = 0;
90         }
91         u8PreValue = u8CurValue;
92     }
93
94     *pu8State = u8CurValue;
95     return u8RetValue;
96 }
```

Here is the caller graph for this function:



### LBTY\_tenuErrorStatus PUSH\_u8GetPushState (u8 u8PushNum, u8\* pu8State)

```
104                                     {
105     LBTY_tenuErrorStatus u8RetValue = PUSH_u8GetDebounce(u8PushNum, pu8State);
106
107     *pu8State = (*pu8State == kau8PushConfiguration_LGB[u8PushNum].m_Active) ?
108     PUSH_PRESSED : PUSH_RELEASED;
109     return u8RetValue;
110 }
```

Here is the call graph for this function:



### void PUSH\_vidInit (u8 u8PushNum)

```
49     {
50     // PUSH_tstrConfig* pstrPush =
51     //     (PUSH_tstrConfig*)&kau8PushConfiguration_LGB[u8PushNum];
52     // GPIO_u8SetPinDirection(pstrPush->m_PinCfg.m_Port,
53 pstrPush->m_PinCfg.m_Pin, PIN_INPUT);
54     GPIO_u8PinInit(kau8PushConfiguration_LGB[u8PushNum].m_PinCfg);
55 }
```

### void PUSH\_vidInitAll (void)

```
61     {
62     for(u8 i = PUSH_Num ; i-- ; ){
63         GPIO_u8PinInit(kau8PushConfiguration_LGB[i].m_PinCfg);
64     }
65 }
```

## PUSH\_int.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name : PUSH_int.h */
5 /* Author : MAAM */
6 /* Version : v01.2 */
7 /* date : Mar 30, 2023 */
8 /* ***** */
9 /* ***** HEADER FILES INCLUDES ***** */
10 /* ***** */
11
12 #ifndef PUSH_INT_H_
13 #define PUSH_INT_H_
14
15 /* ***** */
16 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
17 /* ***** */
18
19 typedef enum{
20     PUSH Active Low = (u8)0u,
21     PUSH Active High
22 }PUSH tenuActive;
23
24 typedef enum{
25     PUSH RELEASED = (u8)0u,
26     PUSH PRESSED
27 }PUSH tenuStatus;
28
29
30 /*****
31 *****/
32
33 typedef struct{
34     PUSH tenuActive m Active;
35     GPIO_tstrPinConfig m PinCfg;
36 }PUSH tstrConfig;
37
38 /* ***** */
39 /* ***** MACRO/DEFINE SECTION ***** */
40 /* ***** */
41
42 /* ***** */
43 /* ***** CONST SECTION ***** */
44 /* ***** */
45
46 /* ***** */
47 /* ***** VARIABLE SECTION ***** */
48 /* ***** */
49
50 /* ***** */
51 /* ***** FUNCTION SECTION ***** */
52 /* ***** */
53
54 /* ***** */
55 /* Description : Initialize the Push Button direction */
56 /* Input : u8PushNum */
57 /* Return : void */
58 /* ***** */
59 extern void PUSH vidInit(u8 u8PushNum);
60
61 /* ***** */
62 /* Description : Initialize the All Push Button with Configurations */
63 /* Input : void */
64 /* Return : void */
65 /* ***** */
66 extern void PUSH vidInitAll(void);
67
68 /* ***** */
69 /* Description : Get the Push Button DeBouncing */
70 /* Input : u8PushNum */
71 /* Input/Output: pu8State */
72 /* Return : LBTY_tenuErrorStatus */

```

```

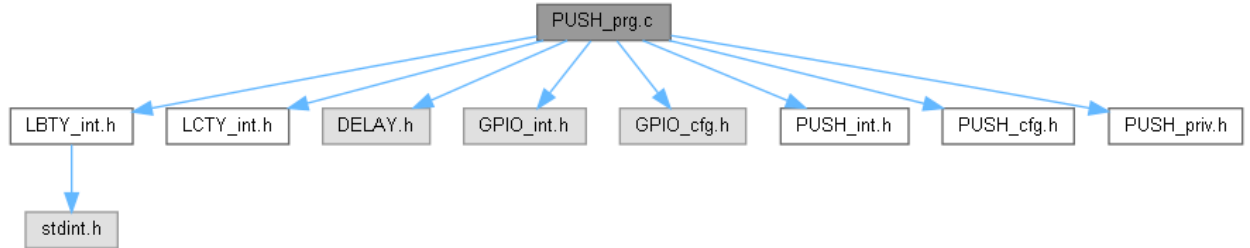
73 /* ***** */
74 extern LBTY_tenuErrorStatus PUSH u8GetDebounce(u8 u8PushNum, u8* pu8State);
75
76 /* ***** */
77 /* Description :    Get the Push Button value */
78 /* Input       :    u8PushNum */
79 /* Input/Output:    pu8State */
80 /* Return      :    LBTY_tenuErrorStatus */
81 /* ***** */
82 extern LBTY_tenuErrorStatus PUSH u8GetPushState(u8 u8PushNum, u8* pu8State);
83
84 #endif /* PUSH_INT_H_ */
85 /***** E N D (PUSH_int.h) *****/

```

## PUSH\_prg.c File Reference

```
#include "LBTY_int.h"
#include "LCTY_int.h"
#include "DELAY.h"
#include "GPIO_int.h"
#include "GPIO_cfg.h"
#include "PUSH_int.h"
#include "PUSH_cfg.h"
#include "PUSH_priv.h"
```

Include dependency graph for PUSH\_prg.c:



## Functions

- void [PUSH\\_vidInit](#) ([u8](#) u8PushNum)
- void [PUSH\\_vidInitAll](#) (void)
- [LBTY\\_tenuErrorStatus](#) [PUSH\\_u8GetDebounce](#) ([u8](#) u8PushNum, [u8](#) \*pu8State)
- [LBTY\\_tenuErrorStatus](#) [PUSH\\_u8GetPushState](#) ([u8](#) u8PushNum, [u8](#) \*pu8State)

## Variables

- const [PUSH\\_tstrConfig](#) [kau8PushConfiguration\\_LGB](#) [[PUSH\\_Num](#)]

## Function Documentation

### [LBTY\\_tenuErrorStatus](#) [PUSH\\_u8GetDebounce](#) ([u8](#) u8PushNum, [u8](#) \* pu8State)

```
72                                     {
73     u8 u8PreValue = LBTY\_u8ZERO;
74     u8 u8CurValue = LBTY\_u8ZERO;
75     u8 u8DebouncingCount = LBTY\_u8ZERO;
76
77     PUSH\_tstrConfig* pstrPush =
78         (PUSH\_tstrConfig*) &kau8PushConfiguration\_LGB[u8PushNum];
79     LBTY\_tenuErrorStatus u8RetValue =
80         GPIO\_u8GetPinValue(pstrPush->m_PinCfg.m_Port,
81         pstrPush->m_PinCfg.m_Pin, &u8PreValue);
82
83     while ((u8DebouncingCount < DEBOUNCING\_CYCLES\_NUM) && (u8RetValue == LBTY\_OK)) {
84         vidMyDelay_ms(DEBOUNCING\_DELAY);
85         u8RetValue = GPIO\_u8GetPinValue(pstrPush->m_PinCfg.m_Port,
86         pstrPush->m_PinCfg.m_Pin, &u8CurValue);
87
88         if(u8PreValue == u8CurValue){
89             u8DebouncingCount++;
90         }else{
91             u8DebouncingCount = 0;
92         }
93         u8PreValue = u8CurValue;
94     }
95     *pu8State = u8CurValue;
96     return u8RetValue;
97 }
```

Here is the caller graph for this function:



**LBTY\_tenuErrorStatus PUSH\_u8GetPushState (u8 u8PushNum, u8 \* pu8State)**

```

104                                     {
105     LBTY_tenuErrorStatus u8RetVal = PUSH_u8GetDebounce(u8PushNum, pu8State);
106
107     *pu8State = (*pu8State == kau8PushConfiguration_LGB[u8PushNum].m_Active) ?
PUSH_PRESSED : PUSH_RELEASED;
108     return u8RetVal;
109 }
  
```

Here is the call graph for this function:



**void PUSH\_vidInit (u8 u8PushNum)**

```

49     {
50     // PUSH_tstrConfig* pstrPush =
51     //     (PUSH_tstrConfig*)&kau8PushConfiguration_LGB[u8PushNum];
52     // GPIO_u8SetPinDirection(pstrPush->m_PinCfg.m_Port,
53     pstrPush->m_PinCfg.m_Pin, PIN_INPUT);
54     GPIO_u8PinInit(kau8PushConfiguration_LGB[u8PushNum].m_PinCfg);
55 }
  
```

**void PUSH\_vidInitAll (void )**

```

61     {
62     for(u8 i = PUSH_Num ; i-- ; ){
63         GPIO_u8PinInit(kau8PushConfiguration_LGB[i].m_PinCfg);
64     }
65 }
  
```

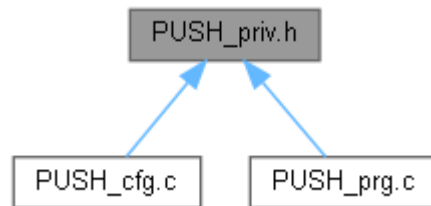
## Variable Documentation

const PUSH\_tstrConfig kau8PushConfiguration\_LGB[PUSH\_Num][extern]



## PUSH\_priv.h File Reference

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



## Enumerations

- enum [PUSH\\_tenuPushNum](#) { [PUSH\\_Num](#) }

---

## Enumeration Type Documentation

enum [PUSH\\_tenuPushNum](#)

Enumerator:

	PUSH_Num
19	{
20	<code>#ifdef PUSH0</code>
21	<code>PUSH_0 = (u8)0u</code>
22	<code>#endif</code>
23	<code>#ifdef <a href="#">PUSH1</a></code>
24	<code>,PUSH_1</code>
25	<code>#endif</code>
26	<code>#ifdef <a href="#">PUSH2</a></code>
27	<code>,PUSH_2</code>
28	<code>#endif</code>
29	<code>#ifdef <a href="#">PUSH3</a></code>
30	<code>,PUSH_3</code>
31	<code>#endif</code>
32	<code>#ifdef <a href="#">PUSH4</a></code>
33	<code>,PUSH_4</code>
34	<code>#endif</code>
35	<code>#ifdef <a href="#">PUSH5</a></code>
36	<code>,PUSH_5</code>
37	<code>#endif</code>
38	<code>#ifdef <a href="#">PUSH6</a></code>
39	<code>,PUSH_6</code>
40	<code>#endif</code>
41	<code>#ifdef <a href="#">PUSH7</a></code>
42	<code>,PUSH_7</code>
43	<code>#endif</code>
44	<code>,<a href="#">PUSH_Num</a></code>
45	<code>} <a href="#">PUSH_tenuPushNum</a>;</code>

## PUSH\_priv.h

```
Go to the documentation of this file.1 /*
*****
2 /* ***** FILE DEFINITION SECTION ***** */
3 /* ***** */
4 /* File Name : PUSH_priv.h */
5 /* Author : MAAM */
6 /* Version : v01.2 */
7 /* date : Mar 30, 2023 */
8 /* ***** */
9 /* ***** HEADER FILES INCLUDES ***** */
10 /* ***** */
11
12 #ifndef PUSH_PRIV_H_
13 #define PUSH_PRIV_H_
14
15 /* ***** */
16 /* ***** TYPE_DEF/STRUCT/ENUM SECTION ***** */
17 /* ***** */
18
19 typedef enum{
20 #ifdef PUSH0
21     PUSH_0 = (u8)0u
22 #endif
23 #ifdef PUSH1
24     ,PUSH_1
25 #endif
26 #ifdef PUSH2
27     ,PUSH_2
28 #endif
29 #ifdef PUSH3
30     ,PUSH_3
31 #endif
32 #ifdef PUSH4
33     ,PUSH_4
34 #endif
35 #ifdef PUSH5
36     ,PUSH_5
37 #endif
38 #ifdef PUSH6
39     ,PUSH_6
40 #endif
41 #ifdef PUSH7
42     ,PUSH_7
43 #endif
44     ,PUSH\_Num
45 }PUSH\_tenuPushNum;
46
47 /* ***** */
48 /* ***** MACRO/DEFINE SECTION ***** */
49 /* ***** */
50
51 /* ***** */
52 /* ***** CONST SECTION ***** */
53 /* ***** */
54
55 /* ***** */
56 /* ***** VARIABLE SECTION ***** */
57 /* ***** */
58
59 /* ***** */
60 /* ***** FUNCTION SECTION ***** */
61 /* ***** */
62
63
64 #endif /* PUSH_PRIV_H_ */
65 /***** E N D (PUSH_priv.h) *****/
```

# 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))
```

```

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{
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```

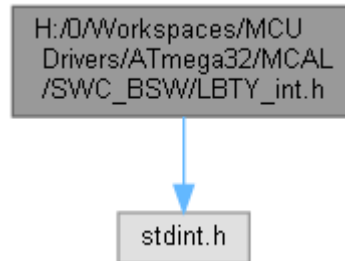
65 (0b##b15##b14##b13##b12##b11##b10##b9##b8##b7##b6##b5##b4##b3##b2##b1##b0)
66
67 /* ***** */
68 /* ***** CONST SECTION ***** */
69 /* ***** */
70
71 /* ***** */
72 /* ***** VARIABLE SECTION ***** */
73 /* ***** */
74
75 /* ***** */
76 /* ***** FUNCTION SECTION ***** */
77 /* ***** */
78
79
80 #endif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

```

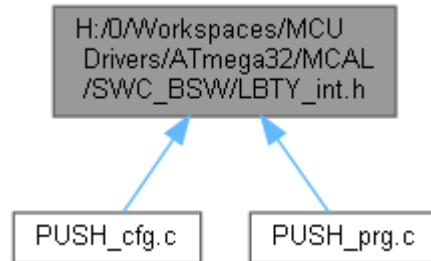
## H:/0/Workspaces/MCU Drivers/ATmega32/MCAL/SWC\_BSW/LBTY\_int.h File Reference

#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
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
76 #define LBTY_u32ZERO ((u32)0x00000000UL)
77 #define LBTY_u32MAX ((u32)0xFFFFFFFFUL)
78 #define LBTY_s32MAX ((u32)0x7FFFFFFF )
79 #define LBTY_s32MIN ((u32)0x80000000L )
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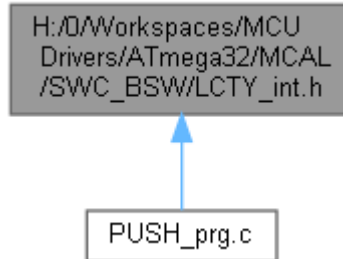
80 #define LBTY_u64ZERO      ((u64)0x0000000000000000ULL)
81 #define LBTY_u64MAX       ((u64)0xFFFFFFFFFFFFFFFFULL)
82 #define LBTY_s64MAX       ((u64)0x7FFFFFFFFFFFFFFFLL )
83 #define LBTY_s64MIN       ((u64)0x8000000000000000LL )
84
85 /* ***** */
86 /* ***** ENUM SECTION ***** */
87 /* ***** */
88
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) *****/
```