

Snake OLED

1.0

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Chapter 1

File Index

1.1 File List

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Chapter 2

File Documentation

2.1 ADC.c File Reference

```
#include <stdint.h>
#include <stdbool.h>
#include "user.h"
```

Functions

- void [initWiFIREadc](#) (void)
- int [convertWiFIREadc](#) (uint8_t channelNumber)
- int [ReadPotentiometerWithADC](#) (void)

2.1.1 Function Documentation

2.1.1.1 [convertWiFIREadc\(\)](#)

```
int convertWiFIREadc (
    uint8_t channelNumber )
```

2.1.1.2 [initWiFIREadc\(\)](#)

```
void initWiFIREadc (
    void )
```

2.1.1.3 ReadPotentiometerWithADC()

```
int ReadPotentiometerWithADC (
    void )
```

2.2 ADC.h File Reference

Functions

- void [initWiFIREadc](#) (void)
- int [convertWiFIREadc](#) (uint8_t channelNumber)

2.2.1 Function Documentation

2.2.1.1 convertWiFIREadc()

```
int convertWiFIREadc (
    uint8_t channelNumber )
```

2.2.1.2 initWiFIREadc()

```
void initWiFIREadc (
    void )
```

2.3 configuration_bits.c File Reference

2.4 main.c File Reference

```
#include <stdint.h>
#include <stdbool.h>
#include <stdio.h>
#include <math.h>
#include "user.h"
```

Functions

- int32_t [main](#) (void)

Variables

- char `buff` [20]

2.4.1 Function Documentation

2.4.1.1 `main()`

```
int32_t main (  
            void )
```

2.4.2 Variable Documentation

2.4.2.1 `buff`

```
char buff[20]
```

2.5 OLED/ChrFont0.c File Reference

```
#include <stdint.h>  
#include "OLED.h"
```

Variables

- const `BYTE rgbOledFont0` []

2.5.1 Variable Documentation

2.5.1.1 `rgbOledFont0`

```
const BYTE rgbOledFont0[]
```

2.6 OLED/FillPat.c File Reference

```
#include <stdint.h>
#include "OLED.h"
```

Variables

- const [BYTE](#) [rgbFillPat](#) []

2.6.1 Variable Documentation

2.6.1.1 [rgbFillPat](#)

```
const BYTE rgbFillPat []
```

Initial value:

```
= {
    0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00,
    0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,
    0xAA, 0x55, 0xAA, 0x55, 0xAA, 0x55, 0xAA, 0x55,
    0x11, 0x44, 0x00, 0x11, 0x44, 0x00, 0x11, 0x44,
    0x92, 0x45, 0x24, 0x92, 0x45, 0x24, 0x92, 0x45,
    0x49, 0x92, 0x24, 0x49, 0x92, 0x24, 0x49, 0x92,
    0x22, 0x11, 0x22, 0x00, 0x22, 0x11, 0x22, 0x00,
    0x11, 0x22, 0x11, 0x00, 0x11, 0x22, 0x11, 0x00
}
```

2.7 OLED/OLED.c File Reference

```
#include "OLED.h"
#include "user.h"
```

Macros

- #define [cmdOledDisplayOn](#) 0xAF
- #define [cmdOledDisplayOff](#) 0xAE
- #define [cmdOledSegRemap](#) 0xA1
- #define [cmdOledComDir](#) 0xC8
- #define [cmdOledComConfig](#) 0xDA

Functions

- void [OledHostInit](#) ()
- void [OledDsplInit](#) ()
- void [OledDvrlInit](#) ()
- void [OledUpdate](#) ()
- void [OledHostTerm](#) ()
- void [OledDevTerm](#) ()

Variables

- [BYTE](#) [rgbOledFont0](#) []
- [BYTE](#) [rgbOledFontUser](#) []
- [BYTE](#) [rgbFillPat](#) []
- [int](#) [xchOledMax](#)
- [int](#) [ychOledMax](#)
- [int](#) [xcoOledCur](#)
- [int](#) [ycoOledCur](#)
- [BYTE](#) * [pbOledCur](#)
- [int](#) [bnOledCur](#)
- [BYTE](#) [clrOledCur](#)
- [BYTE](#) * [pbOledPatCur](#)
- [int](#) [fOledCharUpdate](#)
- [int](#) [dxcoOledFontCur](#)
- [int](#) [dycoOledFontCur](#)
- [BYTE](#) * [pbOledFontCur](#)
- [BYTE](#) * [pbOledFontUser](#)

2.7.1 Macro Definition Documentation

2.7.1.1 cmdOledComConfig

```
#define cmdOledComConfig 0xDA
```

2.7.1.2 cmdOledComDir

```
#define cmdOledComDir 0xC8
```

2.7.1.3 cmdOledDisplayOff

```
#define cmdOledDisplayOff 0xAE
```

2.7.1.4 cmdOledDisplayOn

```
#define cmdOledDisplayOn 0xAF
```

2.7.1.5 cmdOledSegRemap

```
#define cmdOledSegRemap 0xA1
```

2.7.2 Function Documentation

2.7.2.1 OledDevTerm()

```
void OledDevTerm ( )
```

2.7.2.2 OledDspInit()

```
void OledDspInit ( )
```

2.7.2.3 OledDvrInit()

```
void OledDvrInit ( )
```

2.7.2.4 OledHostInit()

```
void OledHostInit ( )
```

Function:

Summary:

Description:

Remarks:

2.7.2.5 OledHostTerm()

```
void OledHostTerm ( )
```

2.7.2.6 OledUpdate()

```
void OledUpdate ( )
```

2.7.3 Variable Documentation

2.7.3.1 bnOledCur

```
int bnOledCur
```

2.7.3.2 clrOledCur

```
BYTE clrOledCur
```

2.7.3.3 dxcoOledFontCur

```
int dxcoOledFontCur
```

2.7.3.4 dycoOledFontCur

```
int dycoOledFontCur
```

2.7.3.5 fOledCharUpdate

```
int fOledCharUpdate
```

2.7.3.6 pbOledCur

`BYTE* pbOledCur`

2.7.3.7 pbOledFontCur

`BYTE* pbOledFontCur`

2.7.3.8 pbOledFontUser

`BYTE* pbOledFontUser`

2.7.3.9 pbOledPatCur

`BYTE* pbOledPatCur`

2.7.3.10 rgbFillPat

`BYTE rgbFillPat[]`

2.7.3.11 rgbOledFont0

`BYTE rgbOledFont0[]`

2.7.3.12 rgbOledFontUser

`BYTE rgbOledFontUser[]`

2.7.3.13 xchOledMax

`int xchOledMax`

2.7.3.14 xcoOledCur

```
int xcoOledCur
```

2.7.3.15 ychOledMax

```
int ychOledMax
```

2.7.3.16 ycoOledCur

```
int ycoOledCur
```

2.8 OLED/OLED.h File Reference

```
#include <xc.h>
#include <stdint.h>
```

Macros

- #define [MASK\(x\)](#) (1<<(x))
- #define [prtVddCtrl](#) PORTD
- #define [bitVddCtrl](#) MASK(12)
- #define [prtVbatCtrl](#) PORTD
- #define [bitVbatCtrl](#) MASK(15)
- #define [prtDataCmd](#) PORTD
- #define [bitDataCmd](#) MASK(14)
- #define [prtReset](#) PORTG
- #define [bitReset](#) MASK(9)
- #define [cbOledDispMax](#) 512
- #define [ccolOledMax](#) 128
- #define [crowOledMax](#) 32
- #define [cpagOledMax](#) 4
- #define [cbOledChar](#) 8
- #define [chOledUserMax](#) 0x20
- #define [cbOledFontUser](#) (chOledUserMax*cbOledChar)
- #define [modOledSet](#) 0
- #define [modOledOr](#) 1
- #define [modOledAnd](#) 2
- #define [modOledXor](#) 3

Typedefs

- typedef uint8_t [BYTE](#)

Functions

- void [OledInit](#) ()
- void [OledDvrlInit](#) ()
- void [OledTerm](#) ()
- void [OledDisplayOn](#) ()
- void [OledDisplayOff](#) ()
- void [OledClear](#) ()
- void [OledClearBuffer](#) ()
- void [OledUpdate](#) ()

Variables

- [BYTE](#) [rgbOledBmp](#) [[cbOledDispMax](#)]

2.8.1 Macro Definition Documentation

2.8.1.1 bitDataCmd

```
#define bitDataCmd MASK(14)
```

2.8.1.2 bitReset

```
#define bitReset MASK(9)
```

2.8.1.3 bitVbatCtrl

```
#define bitVbatCtrl MASK(15)
```

2.8.1.4 bitVddCtrl

```
#define bitVddCtrl MASK(12)
```

2.8.1.5 cbOledChar

```
#define cbOledChar 8
```

2.8.1.6 cbOledDispMax

```
#define cbOledDispMax 512
```

2.8.1.7 cbOledFontUser

```
#define cbOledFontUser (chOledUserMax*cbOledChar)
```

2.8.1.8 ccolOledMax

```
#define ccolOledMax 128
```

2.8.1.9 chOledUserMax

```
#define chOledUserMax 0x20
```

2.8.1.10 cpagOledMax

```
#define cpagOledMax 4
```

2.8.1.11 crowOledMax

```
#define crowOledMax 32
```

2.8.1.12 MASK

```
#define MASK(  
    x ) (1<<(x))
```

2.8.1.13 modOledAnd

```
#define modOledAnd 2
```

2.8.1.14 modOledOr

```
#define modOledOr 1
```

2.8.1.15 modOledSet

```
#define modOledSet 0
```

2.8.1.16 modOledXor

```
#define modOledXor 3
```

2.8.1.17 prtDataCmd

```
#define prtDataCmd PORTD
```

2.8.1.18 prtReset

```
#define prtReset PORTG
```

2.8.1.19 prtVbatCtrl

```
#define prtVbatCtrl PORTD
```

2.8.1.20 prtVddCtrl

```
#define prtVddCtrl PORTD
```


2.8.2 Typedef Documentation

2.8.2.1 BYTE

```
typedef uint8_t BYTE
```

2.8.3 Function Documentation

2.8.3.1 OledClear()

```
void OledClear ( )
```

2.8.3.2 OledClearBuffer()

```
void OledClearBuffer ( )
```

2.8.3.3 OledDisplayOff()

```
void OledDisplayOff ( )
```

2.8.3.4 OledDisplayOn()

```
void OledDisplayOn ( )
```

2.8.3.5 OledDvrInit()

```
void OledDvrInit ( )
```

2.8.3.6 OledInit()

```
void OledInit ( )
```

Function prototype:

Summary:

Description:

Precondition:

Parameters:

Returns:

Example:

Remarks:

2.8.3.7 OledTerm()

```
void OledTerm ( )
```

2.8.3.8 OledUpdate()

```
void OledUpdate ( )
```

2.8.4 Variable Documentation

2.8.4.1 rgbOledBmp

```
BYTE rgbOledBmp[cbOledDispMax]
```

2.9 OLED/OledChar.c File Reference

```
#include <inttypes.h>
#include "OLED.h"
#include "OledChar.h"
#include "OledGrph.h"
```

Functions

- void `OledDrawGlyph` (char ch)
- void `OledAdvanceCursor` ()
- void `OledSetCursor` (int xch, int ych)
- void `OledGetCursor` (int *pxch, int *pych)
- int `OledDefUserChar` (char ch, BYTE *pbDef)
- void `OledSetCharUpdate` (int f)
- int `OledGetCharUpdate` ()
- void `OledPutChar` (char ch)
- void `OledPutString` (char *sz)

Variables

- int `xcoOledCur`
- int `ycoOledCur`
- BYTE * `pbOledCur`
- BYTE `mskOledCur`
- int `bnOledCur`
- int `fOledCharUpdate`
- BYTE `rgbOledBmp` []
- int `dxcoOledFontCur`
- int `dycoOledFontCur`
- BYTE * `pbOledFontCur`
- BYTE * `pbOledFontUser`
- int `xchOledCur`
- int `ychOledCur`
- int `xchOledMax`
- int `ychOledMax`
- BYTE * `pbOledFontExt`
- BYTE `rgbOledFontUser` [`cbOledFontUser`]

2.9.1 Function Documentation

2.9.1.1 `OledAdvanceCursor()`

```
void OledAdvanceCursor ( )
```

2.9.1.2 `OledDefUserChar()`

```
int OledDefUserChar (
    char ch,
    BYTE * pbDef )
```

2.9.1.3 OledDrawGlyph()

```
void OledDrawGlyph (
    char ch )
```

2.9.1.4 OledGetCharUpdate()

```
int OledGetCharUpdate ( )
```

2.9.1.5 OledGetCursor()

```
void OledGetCursor (
    int * pxch,
    int * pych )
```

2.9.1.6 OledPutChar()

```
void OledPutChar (
    char ch )
```

2.9.1.7 OledPutString()

```
void OledPutString (
    char * sz )
```

2.9.1.8 OledSetCharUpdate()

```
void OledSetCharUpdate (
    int f )
```

2.9.1.9 OledSetCursor()

```
void OledSetCursor (
    int xch,
    int ych )
```

2.9.2 Variable Documentation

2.9.2.1 bnOledCur

```
int bnOledCur
```

2.9.2.2 dxcoOledFontCur

```
int dxcoOledFontCur
```

2.9.2.3 dycoOledFontCur

```
int dycoOledFontCur
```

2.9.2.4 fOledCharUpdate

```
int fOledCharUpdate
```

2.9.2.5 mskOledCur

```
BYTE mskOledCur
```

2.9.2.6 pbOledCur

```
BYTE* pbOledCur
```

2.9.2.7 pbOledFontCur

```
BYTE* pbOledFontCur
```

2.9.2.8 pbOledFontExt

`BYTE* pbOledFontExt`

2.9.2.9 pbOledFontUser

`BYTE* pbOledFontUser`

2.9.2.10 rgbOledBmp

`BYTE rgbOledBmp[]`

2.9.2.11 rgbOledFontUser

`BYTE rgbOledFontUser[cbOledFontUser]`

2.9.2.12 xchOledCur

`int xchOledCur`

2.9.2.13 xchOledMax

`int xchOledMax`

2.9.2.14 xcoOledCur

`int xcoOledCur`

2.9.2.15 ychOledCur

`int ychOledCur`

2.9.2.16 ychOledMax

```
int ychOledMax
```

2.9.2.17 ycoOledCur

```
int ycoOledCur
```

2.10 OLED/OledChar.h File Reference

Functions

- void [OledSetCursor](#) (int xch, int ych)
- void [OledGetCursor](#) (int *pxcy, int *pych)
- int [OledDefUserChar](#) (char ch, uint8_t *pbDef)
- void [OledSetCharUpdate](#) (int f)
- int [OledGetCharUpdate](#) ()
- void [OledPutChar](#) (char ch)
- void [OledPutString](#) (char *sz)

2.10.1 Function Documentation

2.10.1.1 OledDefUserChar()

```
int OledDefUserChar (  
    char ch,  
    uint8_t * pbDef )
```

2.10.1.2 OledGetCharUpdate()

```
int OledGetCharUpdate ( )
```

2.10.1.3 OledGetCursor()

```
void OledGetCursor (  
    int * pxcy,  
    int * pych )
```

2.10.1.4 OledPutChar()

```
void OledPutChar (
    char ch )
```

2.10.1.5 OledPutString()

```
void OledPutString (
    char * sz )
```

2.10.1.6 OledSetCharUpdate()

```
void OledSetCharUpdate (
    int f )
```

2.10.1.7 OledSetCursor()

```
void OledSetCursor (
    int xch,
    int ych )
```

2.11 OLED/OledGrph.c File Reference

```
#include <stdint.h>
#include "OLED.h"
```

Functions

- void [OledMoveDown](#) ()
- void [OledMoveUp](#) ()
- void [OledMoveRight](#) ()
- void [OledMoveLeft](#) ()
- [BYTE OledRopSet](#) ([BYTE bPix](#), [BYTE bDsp](#), [BYTE mskPix](#))
- [BYTE OledRopOr](#) ([BYTE bPix](#), [BYTE bDsp](#), [BYTE mskPix](#))
- [BYTE OledRopAnd](#) ([BYTE bPix](#), [BYTE bDsp](#), [BYTE mskPix](#))
- [BYTE OledRopXor](#) ([BYTE bPix](#), [BYTE bDsp](#), [BYTE mskPix](#))
- int [OledClampXco](#) (int *xco*)
- int [OledClampYco](#) (int *yco*)
- void [OledMoveTo](#) (int *xco*, int *yco*)
- void [OledGetPos](#) (int **pxco*, int **pyco*)
- void [OledSetDrawColor](#) ([BYTE clr](#))

- `BYTE * OledGetStdPattern (int ipat)`
- `void OledSetFillPattern (BYTE *pbPat)`
- `void OledSetDrawMode (int mod)`
- `int OledGetDrawMode ()`
- `void OledDrawPixel ()`
- `BYTE OledGetPixel ()`
- `void OledLineTo (int xco, int yco)`
- `void OledDrawRect (int xco, int yco)`
- `void OledFillRect (int xco, int yco)`
- `void OledGetBmp (int dxco, int dyco, BYTE *pbBits)`
- `void OledPutBmp (int dxco, int dyco, BYTE *pbBits)`
- `void OledDrawChar (char ch)`
- `void OledDrawString (char *sz)`

Variables

- `int xcoOledCur`
- `int ycoOledCur`
- `BYTE * pbOledCur`
- `BYTE rgbOledBmp []`
- `BYTE rgbFillPat []`
- `int bnOledCur`
- `BYTE clrOledCur`
- `BYTE * pbOledPatCur`
- `BYTE * pbOledFontUser`
- `BYTE * pbOledFontCur`
- `int dxcoOledFontCur`
- `int dycoOledFontCur`
- `BYTE(* pfnDoRop)(BYTE bPix, BYTE bDsp, BYTE mskPix)`
- `int modOledCur`

2.11.1 Function Documentation

2.11.1.1 OledClampXco()

```
int OledClampXco (  
    int xco )
```

2.11.1.2 OledClampYco()

```
int OledClampYco (  
    int yco )
```

2.11.1.3 OledDrawChar()

```
void OledDrawChar (
    char ch )
```

2.11.1.4 OledDrawPixel()

```
void OledDrawPixel ( )
```

2.11.1.5 OledDrawRect()

```
void OledDrawRect (
    int xco,
    int yco )
```

2.11.1.6 OledDrawString()

```
void OledDrawString (
    char * sz )
```

2.11.1.7 OledFillRect()

```
void OledFillRect (
    int xco,
    int yco )
```

2.11.1.8 OledGetBmp()

```
void OledGetBmp (
    int dxco,
    int dyco,
    BYTE * pbBits )
```

2.11.1.9 OledGetDrawMode()

```
int OledGetDrawMode ( )
```

2.11.1.10 OledGetPixel()

```
BYTE OledGetPixel ( )
```

2.11.1.11 OledGetPos()

```
void OledGetPos (
    int * pxco,
    int * pyco )
```

2.11.1.12 OledGetStdPattern()

```
BYTE* OledGetStdPattern (
    int ipat )
```

2.11.1.13 OledLineTo()

```
void OledLineTo (
    int xco,
    int yco )
```

2.11.1.14 OledMoveDown()

```
void OledMoveDown ( )
```

2.11.1.15 OledMoveLeft()

```
void OledMoveLeft ( )
```

2.11.1.16 OledMoveRight()

```
void OledMoveRight ( )
```

2.11.1.17 OledMoveTo()

```
void OledMoveTo (
    int xco,
    int yco )
```

2.11.1.18 OledMoveUp()

```
void OledMoveUp ( )
```

2.11.1.19 OledPutBmp()

```
void OledPutBmp (
    int dxco,
    int dyco,
    BYTE * pbBits )
```

2.11.1.20 OledRopAnd()

```
BYTE OledRopAnd (
    BYTE bPix,
    BYTE bDsp,
    BYTE mskPix )
```

2.11.1.21 OledRopOr()

```
BYTE OledRopOr (
    BYTE bPix,
    BYTE bDsp,
    BYTE mskPix )
```

2.11.1.22 OledRopSet()

```
BYTE OledRopSet (
    BYTE bPix,
    BYTE bDsp,
    BYTE mskPix )
```

2.11.1.23 OledRopXor()

```
BYTE OledRopXor (
    BYTE bPix,
    BYTE bDsp,
    BYTE mskPix )
```

2.11.1.24 OledSetDrawColor()

```
void OledSetDrawColor (
    BYTE clr )
```

2.11.1.25 OledSetDrawMode()

```
void OledSetDrawMode (
    int mod )
```

2.11.1.26 OledSetFillPattern()

```
void OledSetFillPattern (
    BYTE * pbPat )
```

2.11.2 Variable Documentation

2.11.2.1 bnOledCur

```
int bnOledCur
```

2.11.2.2 clrOledCur

`BYTE clrOledCur`

2.11.2.3 dxcoOledFontCur

`int dxcoOledFontCur`

2.11.2.4 dycoOledFontCur

`int dycoOledFontCur`

2.11.2.5 modOledCur

`int modOledCur`

2.11.2.6 pbOledCur

`BYTE* pbOledCur`

2.11.2.7 pbOledFontCur

`BYTE* pbOledFontCur`

2.11.2.8 pbOledFontUser

`BYTE* pbOledFontUser`

2.11.2.9 pbOledPatCur

`BYTE* pbOledPatCur`

2.11.2.10 pfnDoRop

```
BYTE (* pfnDoRop) (BYTE bPix, BYTE bDsp, BYTE mskPix)
```

2.11.2.11 rgbFillPat

```
BYTE rgbFillPat[ ]
```

2.11.2.12 rgbOledBmp

```
BYTE rgbOledBmp[ ]
```

2.11.2.13 xcoOledCur

```
int xcoOledCur
```

2.11.2.14 ycoOledCur

```
int ycoOledCur
```

2.12 OLED/OledGrph.h File Reference

Functions

- void [OledSetDrawColor](#) (uint8_t clr)
- void [OledSetDrawMode](#) (int mod)
- int [OledGetDrawMode](#) ()
- uint8_t * [OledGetStdPattern](#) (int ipat)
- void [OledSetFillPattern](#) (uint8_t *pbPat)
- void [OledMoveTo](#) (int xco, int yco)
- void [OledGetPos](#) (int *pxco, int *pyco)
- void [OledDrawPixel](#) ()
- uint8_t [OledGetPixel](#) ()
- void [OledLineTo](#) (int xco, int yco)
- void [OledDrawRect](#) (int xco, int yco)
- void [OledFillRect](#) (int xco, int yco)
- void [OledGetBmp](#) (int dxco, int dyco, uint8_t *pbBmp)
- void [OledPutBmp](#) (int dxco, int dyco, uint8_t *pbBmp)
- void [OledDrawChar](#) (char ch)
- void [OledDrawString](#) (char *sz)

2.12.1 Function Documentation

2.12.1.1 OledDrawChar()

```
void OledDrawChar (
    char ch )
```

2.12.1.2 OledDrawPixel()

```
void OledDrawPixel ( )
```

2.12.1.3 OledDrawRect()

```
void OledDrawRect (
    int xco,
    int yco )
```

2.12.1.4 OledDrawString()

```
void OledDrawString (
    char * sz )
```

2.12.1.5 OledFillRect()

```
void OledFillRect (
    int xco,
    int yco )
```

2.12.1.6 OledGetBmp()

```
void OledGetBmp (
    int dxco,
    int dyco,
    uint8_t * pbBmp )
```


2.12.1.7 OledGetDrawMode()

```
int OledGetDrawMode ( )
```

2.12.1.8 OledGetPixel()

```
uint8_t OledGetPixel ( )
```

2.12.1.9 OledGetPos()

```
void OledGetPos (
    int * pxco,
    int * pyco )
```

2.12.1.10 OledGetStdPattern()

```
uint8_t* OledGetStdPattern (
    int ipat )
```

2.12.1.11 OledLineTo()

```
void OledLineTo (
    int xco,
    int yco )
```

2.12.1.12 OledMoveTo()

```
void OledMoveTo (
    int xco,
    int yco )
```

2.12.1.13 OledPutBmp()

```
void OledPutBmp (
    int dxco,
    int dyco,
    uint8_t * pbBmp )
```

2.12.1.14 OledSetDrawColor()

```
void OledSetDrawColor (
    uint8_t clr )
```

2.12.1.15 OledSetDrawMode()

```
void OledSetDrawMode (
    int mod )
```

2.12.1.16 OledSetFillPattern()

```
void OledSetFillPattern (
    uint8_t * pbPat )
```

2.13 OLED/SPI.c File Reference

```
#include <stdint.h>
#include "OLED.h"
```

Functions

- void [OledPutBuffer](#) (int cb, [BYTE](#) *rgbTx)
- [BYTE](#) [Spi2PutByte](#) ([BYTE](#) bVal)

2.13.1 Function Documentation

2.13.1.1 OledPutBuffer()

```
void OledPutBuffer (
    int cb,
    BYTE * rgbTx )
```

Function:

Summary:

Description:

Remarks:

2.13.1.2 Spi2PutByte()

```
BYTE Spi2PutByte (
    BYTE bVal )
```

2.14 user.c File Reference

```
#include <stdint.h>
#include <stdbool.h>
#include "user.h"
#include <sys/attrs.h>
#include <proc/p32mz2048efg100.h>
#include "ADC.h"
```

Functions

- void [DelayMs](#) (int t)
- void [InitGPIO](#) (void)
- void [setup](#) ()
- void [oled_init](#) ()
- void [draw](#) ()
- void [input](#) ()
- void [logic](#) ()
- void [set_leds](#) (int32_t leds)
- void [led_test](#) (void)
- void [initTimer2AndIC3](#) (void)
- void [__ISR](#) (_INPUT_CAPTURE_3_VECTOR, IPL2SRS)
- void [OledClear](#) (void)

Variables

- enum [eDirection](#) dir

2.14.1 Function Documentation

2.14.1.1 __ISR()

```
void __ISR (
    _INPUT_CAPTURE_3_VECTOR ,
    IPL2SRS )
```

2.14.1.2 DelayMs()

```
void DelayMs (  
    int t )
```

2.14.1.3 draw()

```
void draw ( )
```

2.14.1.4 InitGPIO()

```
void InitGPIO (  
    void )
```

2.14.1.5 initTimer2AndIC3()

```
void initTimer2AndIC3 (  
    void )
```

2.14.1.6 input()

```
void input ( )
```

2.14.1.7 led_test()

```
void led_test (  
    void )
```

2.14.1.8 logic()

```
void logic ( )
```

2.14.1.9 oled_init()

```
void oled_init ( )
```

2.14.1.10 OledClear()

```
void OledClear (
    void )
```

2.14.1.11 set_leds()

```
void set_leds (
    int32_t leds )
```

2.14.1.12 setup()

```
void setup ( )
```

2.14.2 Variable Documentation

2.14.2.1 dir

```
enum eDirection dir
```

2.15 user.h File Reference

```
#include <stdint.h>
#include <stdbool.h>
#include <OLED/OLED.h>
```

Macros

- `#define LD1_PORT_BIT LATGbits.LATG6`
- `#define LD2_PORT_BIT LATDbits.LATD4`
- `#define LD3_PORT_BIT LATBbits.LATB11`
- `#define LD4_PORT_BIT LATGbits.LATG15`
- `#define BTN1_PORT_BIT PORTAbits.RA5`
- `#define BTN2_PORT_BIT PORTAbits.RA4`
- `#define BTN_1_LEFT PORTEbits.RE1`
- `#define BTN_2_UP PORTEbits.RE2`
- `#define VR1_AN_CHAN_NUM 8`

Enumerations

- `enum eDirection {
 STOP = 0, UP, LEFT, DOWN,
 RIGHT }`

Functions

- `void InitApp (void)`
- `void DelayMs (int t)`
- `void led_test (void)`
- `void initTimer2AndIC3 (void)`
- `void set_leds (int32_t leds)`
- `void OledClear (void)`

Variables

- `bool gameOver`
- `const int32_t width = 80`
- `const int32_t height = 32`
- `int32_t x`
- `int32_t y`
- `int32_t fruitX`
- `int32_t fruitY`
- `int32_t score`
- `int32_t nTail`
- `int32_t tailX [100]`
- `int32_t tailY [100]`
- `bool start_game`
- `uint32_t rand_seed`

2.15.1 Macro Definition Documentation

2.15.1.1 BTN1_PORT_BIT

```
#define BTN1_PORT_BIT PORTAbits.RA5
```

2.15.1.2 BTN2_PORT_BIT

```
#define BTN2_PORT_BIT PORTAbits.RA4
```

2.15.1.3 BTN_1_LEFT

```
#define BTN_1_LEFT PORTEbits.RE1
```

2.15.1.4 BTN_2_UP

```
#define BTN_2_UP PORTEbits.RE2
```

2.15.1.5 LD1_PORT_BIT

```
#define LD1_PORT_BIT LATGbits.LATG6
```

2.15.1.6 LD2_PORT_BIT

```
#define LD2_PORT_BIT LATDbits.LATD4
```

2.15.1.7 LD3_PORT_BIT

```
#define LD3_PORT_BIT LATBbits.LATB11
```

2.15.1.8 LD4_PORT_BIT

```
#define LD4_PORT_BIT LATGbits.LATG15
```

2.15.1.9 VR1_AN_CHAN_NUM

```
#define VR1_AN_CHAN_NUM 8
```

2.15.2 Enumeration Type Documentation

2.15.2.1 eDirection

```
enum eDirection
```

Enumerator

STOP	
UP	
LEFT	
DOWN	
RIGHT	

2.15.3 Function Documentation

2.15.3.1 DelayMs()

```
void DelayMs (  
    int t )
```

2.15.3.2 InitApp()

```
void InitApp (  
    void )
```

2.15.3.3 initTimer2AndIC3()

```
void initTimer2AndIC3 (  
    void )
```


2.15.3.4 led_test()

```
void led_test (
    void )
```

2.15.3.5 OledClear()

```
void OledClear (
    void )
```

2.15.3.6 set_leds()

```
void set_leds (
    int32_t leds )
```

2.15.4 Variable Documentation

2.15.4.1 fruitX

```
int32_t fruitX
```

2.15.4.2 fruitY

```
int32_t fruitY
```

2.15.4.3 gameOver

```
bool gameOver
```

2.15.4.4 height

```
const int32_t height = 32
```

2.15.4.5 nTail

```
int32_t nTail
```

2.15.4.6 rand_seed

```
uint32_t rand_seed
```

2.15.4.7 score

```
int32_t score
```

2.15.4.8 start_game

```
bool start_game
```

2.15.4.9 tailX

```
int32_t tailX[100]
```

2.15.4.10 tailY

```
int32_t tailY[100]
```

2.15.4.11 width

```
const int32_t width = 80
```

2.15.4.12 x

```
int32_t x
```

2.15.4.13 y

```
int32_t y
```

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