

Course_work_IoT

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Chapter 1

File Index

1.1 File List

Here is a list of all files with brief descriptions:

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Chapter 2

File Documentation

2.1 D:/KPI/pic32/course_work_iot.X/configuration_bits.c File Reference

2.2 D:/KPI/pic32/course_work_iot.X/main.c File Reference

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

Functions

- `int32_t main (void)`
Initialize I/O and Peripherals for application Setup functionality and port direction.

2.2.1 Function Documentation

2.2.1.1 main()

```
int32_t main (
    void )
```

Initialize I/O and Peripherals for application Setup functionality and port direction.

Parameters

| | | |
|-----|-------------|--|
| out | <i>none</i> | |
| in | <i>none</i> | |

Returns

none

2.3 D:/KPI/pic32/course_work_iot.X/UART.c File Reference

```
#include "UART.h"
```

Functions

- void [uart4_init](#) (void)
- char [uart4_getc](#) (void)
- void [uart4_putc](#) (char c)
- void [uart4_puts](#) (char *s)
- void [uart4_test](#) (void)

2.3.1 Function Documentation

2.3.1.1 [uart4_getc\(\)](#)

```
char uart4\_getc (  
    void )
```

Function prototype:

```
void uart4\_getc(void);
```

Description:

read char symbol from UART

Parameters:

none

Returns:

none

2.3.1.2 uart4_init()

```
void uart4_init (
    void )
```

Function prototype:

```
void uart4\_init(void);
```

Description:

initialize UART

Parameters:

none

Returns:

none

2.3.1.3 uart4_putc()

```
void uart4_putc (
    char c )
```

Function prototype:

```
void uart4\_putc(char c);
```

Description:

put char symbol to UART

Parameters:

char symbol 'c'

Returns:

none

2.3.1.4 uart4_puts()

```
void uart4_puts (
    char * s )
```

Function prototype:

```
void uart4\_puts(char *s);
```

Description:

put char array to UART

Parameters:

char array 's'

Returns:

none

2.3.1.5 uart4_test()

```
void uart4_test (
    void )
```

Function prototype:

```
void uart4\_test(void);
```

Description:

UART test and beginning program

Parameters:

none

Returns:

none

2.4 D:/KPI/pic32/course_work_iot.X/UART.h File Reference

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

Functions

- void [uart4_init](#) (void)
- char [uart4_getc](#) (void)
- void [uart4_putc](#) (char c)
- void [uart4_puts](#) (char *s)
- void [uart4_test](#) (void)

2.4.1 Function Documentation

2.4.1.1 uart4_getc()

```
char uart4_getc (
    void )
```

Function prototype:

```
void uart4\_getc(void);
```

Description:

read char symbol from UART

Parameters:

none

Returns:

none

2.4.1.2 uart4_init()

```
void uart4_init (
    void )
```

Function prototype:

```
void uart4\_init(void);
```

Description:

initialize UART

Parameters:

none

Returns:

none

2.4.1.3 uart4_putc()

```
void uart4_putc (
    char c )
```

Function prototype:

```
void uart4\_putc(char c);
```

Description:

put char symbol to UART

Parameters:

char symbol 'c'

Returns:

none

2.4.1.4 uart4_puts()

```
void uart4_puts (
    char * s )
```

Function prototype:

```
void uart4\_puts(char *s);
```

Description:

put char array to UART

Parameters:

char array 's'

Returns:

none

2.4.1.5 uart4_test()

```
void uart4_test (
    void )
```

Function prototype:

```
void uart4\_test(void);
```

Description:

UART test and beginning program

Parameters:

none

Returns:

none

2.5 D:/KPI/pic32/course_work_iot.X/user.c File Reference

```
#include <stdint.h>
#include <stdbool.h>
#include <string.h>
#include "user.h"
#include <sys/attrs.h>
#include "UART.h"
```

Functions

- void [InitGpio](#) (void)
Initialize input output Setup functionality and port direction.
- void [InitApp](#) (void)
peripherals initialization
- void [ControlStateMachine](#) ()
state machine for control LED's by Bluetooth This function looks like state machine, has 2 states all LED's turned ON and all LED's turned OFF. State machine controls by Bluetooth and UART

2.5.1 Function Documentation

2.5.1.1 ControlStateMachine()

```
void ControlStateMachine (
    void )
```

state machine for control LED's by Bluetooth This function looks like state machine, has 2 states all LED's turned ON and all LED's turned OFF. State machine controls by Bluetooth and UART

Parameters

| | | |
|-----|-------------|--|
| out | <i>none</i> | |
| in | <i>none</i> | |

Returns

none

2.5.1.2 InitApp()

```
void InitApp (
    void )
```

peripherals initialization

Parameters

| | | |
|-----|-------------|--|
| out | <i>none</i> | |
| in | <i>none</i> | |

Returns

none

2.5.1.3 InitGpio()

```
void InitGpio (
    void )
```

Initialize input output Setup functionality and port direction.

Parameters

| | | |
|-----|-------------|--|
| out | <i>none</i> | |
| in | <i>none</i> | |

Returns

none

2.6 D:/KPI/pic32/course_work_iot.X/user.h File Reference

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

Macros

- `#define LD1_PORT_BIT LATGbits.LATG6`
I/O macroses for PORT bits.
- `#define LD2_PORT_BIT LATDbits.LATD4`
- `#define LD3_PORT_BIT LATBbits.LATB11`
- `#define LD4_PORT_BIT LATGbits.LATG15`

Functions

- `void InitApp (void)`
peripherals initialization
- `void ControlStateMachine (void)`
state machine for control LED's by Bluetooth This function looks like state machine, has 2 states all LED's turned ON and all LED's turned OFF. State machine controls by Bluetooth and UART

2.6.1 Macro Definition Documentation

2.6.1.1 LD1_PORT_BIT

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

I/O macroses for PORT bits.

2.6.1.2 LD2_PORT_BIT

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

2.6.1.3 LD3_PORT_BIT

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

2.6.1.4 LD4_PORT_BIT

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

2.6.2 Function Documentation

2.6.2.1 ControlStateMachine()

```
void ControlStateMachine (
    void )
```

state machine for control LED's by Bluetooth This function looks like state machine, has 2 states all LED's turned ON and all LED's turned OFF. State machine controls by Bluetooth and UART

Parameters

| | | |
|-----|-------------|--|
| out | <i>none</i> | |
| in | <i>none</i> | |

Returns

none

2.6.2.2 InitApp()

```
void InitApp (
                void )
```

peripherals initialization

Parameters

| | | |
|-----|-------------|--|
| out | <i>none</i> | |
| in | <i>none</i> | |

Returns

none

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