equalizer

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Global main (void)

User should to compile this code with andy warnings, because this code doesen't work with SRS interrupt, only with SOFT interrupt

Chapter 2

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2.1 File List

Here is a list of all files with brief descriptions:

Chapter 3

File Documentation

3.1 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)

3.1.1 Function Documentation

3.1.1.1 convertWiFIREadc()

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

3.1.1.2 initWiFIREadc()

```
void initWiFIREadc (
            void  )
```

3.1.1.3 ReadPotentiometerWithADC()

```
int ReadPotentiometerWithADC (
            void  )
```

3.2 ADC.h File Reference

Functions

- void initWiFIREadc (void)
- int convertWiFIREadc (uint8_t channelNumber)

3.2.1 Function Documentation

3.2.1.1 convertWiFIREadc()

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

3.2.1.2 initWiFIREadc()

```
void initWiFIREadc (
            void  )
```

3.3 configuration_bits.c File Reference

3.4 main.c File Reference

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

Functions

- int32_t main (void)

  Funny program))0)

3.4.1 Function Documentation

3.4.1.1 main()

```
int32_t main (
            void  )
```

Funny program))0)

Just Blinking LED's num of LED's choose by Potentiometer

Author

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Version

1.0

Bug User should to compile this code with andy warnings, because this code doesen't work with SRS interrupt, only with SOFT interrupt

3.5 user.c File Reference

```
#include <stdint.h>
#include <stdbool.h>
#include "user.h"
#include "ADC.h"
#include <sys/attribs.h>
#include <math.h>
```

Functions

- void InitTimer2 (void)
  This function is using for setting Timer.
- void __ISR (_TIMER_2_VECTOR, IPL3SOFT)
  Interrupt handler.
- void InitGPIO (void)
  This function is using for setting GPIO.
- void InitApp (void)
  This function is using for setting all used devices.
- void Delay (int n)
  Delay function.
- void ScanLEDs (void)
  This function is using for choose num of LEDs.
- int32_t SetDelayTime ()
  This function is setting delay param.
- void FlashLED ()
  This function is start LED's blinking.

Variables

- int32_t Gtemp_buff = 1
- int32_t Gld_counter = 0

3.5.1 Function Documentation

3.5.1.1 __ISR()

```
void __ISR (
             _TIMER_2_VECTOR ,
             IPL3SOFT  )
```

Interrupt handler.

Every time, whet timer is generate interrut, interrupt is checking val of Gtemp_buff and if Gtemp_buff greater than 10, Gtemp_buff = 0 and incrementing else Gtemp_buff just incrementing

Parameters

NONE	

Returns

NONE

3.5.1.2 Delay()

```
void Delay (
             int n )
```

Delay function.

Software realization of delay function, using empty for cycle

Parameters

NONE	

Returns

NONE

3.5.1.3 FlashLED()

```
void FlashLED (
            void  )
```

This function is start LED's blinking.

If user choose 1 LED, it will be blinking If 2 or more LED's, it will ON one by one and OFF like previous

Parameters

NONE	

Returns

NONE

3.5.1.4 InitApp()

```
void InitApp (
            void  )
```

This function is using for setting all used devices.

This function is using for setting all used devices

Parameters

NONE	

Returns

NONE

3.5.1.5 InitGPIO()

```
void InitGPIO (
            void  )
```

This function is using for setting GPIO.

This function is setting LED's 1-4 to digital work mode and output And set BTN's 1-2 to Digital input mode

Parameters

NONE	

Returns

NONE

3.5.1.6 InitTimer2()

```
void InitTimer2 (
            void  )
```

This function is using for setting Timer.

This function is reset Timer 2, set clock divider, set interrupts for timer

Parameters

NONE	

Returns

NONE

3.5.1.7 ScanLEDs()

```
void ScanLEDs (
            void  )
```

This function is using for choose num of LEDs.

This function is using for choose num of LED's whitch will be blinking Don't return any vars, because using Global var Gld_counter

Parameters

NONE	

Returns

NONE

3.5.1.8 SetDelayTime()

```
int32_t SetDelayTime ( )
```

This function is setting delay param.

This function is setting delay param, multiplying Gtemp_buff by 500000

Parameters

NONE	

Returns

Gtemp_buff ∗ 500000

3.5.2 Variable Documentation

3.5.2.1 Gld_counter

```
int32_t Gld_counter = 0
```

This var is using for setting count Delay

3.5.2.2 Gtemp_buff

```
int32_t Gtemp_buff = 1
```

This vars is using for setting count of blinking LEDs

3.6 user.h File Reference

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 VR1_AN_CHAN_NUM (8)
- #define TIMER_CLOCK_FREQ (100000000)
- #define FAST_PERIOD (TIMER_CLOCK_FREQ/(256 ∗ 30))
- #define SLOW_PERIOD (TIMER_CLOCK_FREQ/(256 ∗ 8))

Functions

- void InitApp (void)

  This function is using for setting all used devices.
- void FlashLED (void)

  This function is start LED's blinking.
- void ScanLEDs (void)

  This function is using for choose num of LEDs.

3.6.1 Macro Definition Documentation

3.6.1.1 BTN1_PORT_BIT

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

Definig constants for port bits operations

3.6.1.2 BTN2_PORT_BIT

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

Definig constants for port bits operations

3.6.1.3 FAST_PERIOD

```
#define FAST_PERIOD (TIMER_CLOCK_FREQ/(256 * 30))
```

Definig constant for fast timer period

3.6.1.4 LD1_PORT_BIT

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

Definig constants for port bits operations

3.6.1.5 LD2_PORT_BIT

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

Definig constants for port bits operations

3.6.1.6 LD3_PORT_BIT

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

Definig constants for port bits operations

3.6.1.7 LD4_PORT_BIT

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

Definig constants for port bits operations

3.6.1.8 SLOW_PERIOD

```
#define SLOW_PERIOD (TIMER_CLOCK_FREQ/(256 * 8))
```

Definig constant for slow timer period

3.6.1.9 TIMER_CLOCK_FREQ

```
#define TIMER_CLOCK_FREQ (100000000)
```

Definig constant for timer freq

3.6.1.10 VR1_AN_CHAN_NUM

```
#define VR1_AN_CHAN_NUM (8)
```

3.6.2 Function Documentation

3.6.2.1 FlashLED()

```
void FlashLED (
            void  )
```

This function is start LED's blinking.

If user choose 1 LED, it will be blinking If 2 or more LED's, it will ON one by one and OFF like previous

Parameters

NONE	

Returns

NONE

3.6.2.2 InitApp()

```
void InitApp (
            void  )
```

This function is using for setting all used devices.

This function is using for setting all used devices

Parameters

NONE	

Returns

NONE

3.6.2.3 ScanLEDs()

```
void ScanLEDs (
            void  )
```

This function is using for choose num of LEDs.

This function is using for choose num of LED's whitch will be blinking Don't return any vars, because using Global var Gld_counter

Parameters

NONE	

Returns

NONE

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