OpenADC

Function: Configure the A/D convertor.

Include: `adc.h`

Prototype: void OpenADC(unsigned char ***config***,
unsigned char ***config2*** ,
unsigned char ***portconfig***);

Arguments: ***Config***

A bitmask that is created by performing either bitwise AND operation ('&') or bitwise OR operation ('|'), configurable either way as shown in the example at the end of this file, with a value from each of the categories listed below. These values are defined in the file `adc.h`.

A/D clock source:

`ADC_FOSC_2`	FOSC / 2
`ADC_FOSC_4`	FOSC / 4
`ADC_FOSC_8`	FOSC / 8
`ADC_FOSC_16`	FOSC / 16
`ADC_FOSC_32`	FOSC / 32
`ADC_FOSC_64`	FOSC / 64
`ADC_FOSC_RC`	Internal RC Oscillator

A/D result justification:

`ADC_RIGHT_JUST`	Result in Least Significant bits
`ADC_LEFT_JUST`	Result in Most Significant bits

A/D acquisition time select:

`ADC_0_TAD`	0 Tad
`ADC_2_TAD`	2 Tad
`ADC_4_TAD`	4 Tad
`ADC_6_TAD`	6 Tad
`ADC_8_TAD`	8 Tad
`ADC_12_TAD`	12 Tad
`ADC_16_TAD`	16 Tad
`ADC_20_TAD`	20 Tad

config2

A bitmask that is created by performing either bitwise AND operation ('&') or bitwise OR operation ('|'), configurable either way as shown in the example at the end of this file, with a value from each of the categories listed below. These values are defined in the file `adc.h`.

Channel:

`ADC_CH0`	Channel 0
`ADC_CH1`	Channel 1
`ADC_CH2`	Channel 2
`ADC_CH3`	Channel 3
`ADC_CH4`	Channel 4

ADC_CH5	Channel 5
ADC_CH6	Channel 6
ADC_CH7	Channel 7
ADC_CH8	Channel 8
ADC_CH9	Channel 9
ADC_CH10	Channel 10
ADC_CH11	Channel 11
ADC_CH12	Channel 12
ADC_CH13	Channel 13
ADC_CH14	Channel 14
ADC_CH15	Channel 15

A/D Interrupts:

ADC_INT_ON	Interrupts enabled
ADC_INT_OFF	Interrupts disabled

A/D Vref+ and Vref- configuration:

ADC_REF_VDD_VREFMINUS	VREF+ = VDD & VREF- = Ext.
ADC_REF_VREFPLUS_VREFMINUS	VREF+ = Ext. & VREF- = Ext.
ADC_REF_VREFPLUS_VSS	VREF+ = Ext. & VREF- = VSS
ADC_REF_VDD_VSS	VREF+ = VDD & VREF- = VSS

Portconfig

ADC_0ANA	All digital	
ADC_1ANA	analog:AN0	digital:AN1-AN15
ADC_2ANA	analog:AN0-AN1	digital:AN2-AN15
ADC_3ANA	analog:AN0-AN2	digital:AN3-AN15
ADC_4ANA	analog:AN0-AN3	digital:AN4-AN15
ADC_5ANA	analog:AN0-AN4	digital:AN5-AN15
ADC_6ANA	analog:AN0-AN5	digital:AN6-AN15
ADC_7ANA	analog:AN0-AN6	digital:AN7-AN15
ADC_8ANA	analog:AN0-AN7	digital:AN8-AN15
ADC_9ANA	analog:AN0-AN8	digital:AN9-AN15
ADC_10ANA	analog:AN0-AN9	digital:AN10-AN15
ADC_11ANA	analog:AN0-AN10	digital:AN11-AN15
ADC_12ANA	analog:AN0-AN11	digital:AN12-AN15
ADC_13ANA	analog:AN0-AN12	digital:AN13-AN15
ADC_14ANA	analog:AN0-AN13	digital:AN14-AN15
ADC_15ANA	All analog	

Remarks: This function resets the A/D-related registers to the POR state and then configures the clock, result format, voltage reference, port and channel.

File Name: adcopen.c

Code Example: **With AND mask:**

```
OpenADC( ADC_FOSC_32      &
         ADC_RIGHT_JUST   &
```

```
         ADC_12_TAD,
         ADC_CH0          &
         ADC_REF_VDD_VSS  &
         ADC_INT_OFF, 12  );
```

With OR mask:

```
OpenADC( ADC_FOSC_32      |
         ADC_RIGHT_JUST   |
         ADC_12_TAD,
         ADC_CH0          |
         ADC_REF_VDD_VSS  |
         ADC_INT_OFF, 12  );
```