

```
1  #include "stm32f10x.h"
2  #include "clock.h"
3  #include "ADC1.h"
4  #include "PWM.h"
5  #include "main.h"
6
7  void initSensor1Ports()
8  {
9      RCC->APB2ENR |= RCC_APB2ENR_IOPBEN | RCC_APB2ENR_IOPCEN;
10
11     //Turn PB7 into input, recieve from ultrasound echo
12     GPIOB->CRL |= GPIO_CRL_CNF7_0;
13
14     //Turn PC5 into output.
15     GPIOC->CRL |= GPIO_CRL_MODE5_1 | GPIO_CRL_MODE5_0;
16
17     //Turn PC7 into output.
18     GPIOC->CRL |= GPIO_CRL_MODE7_1 | GPIO_CRL_MODE7_0;
19
20     //Turn the trig to start at 0
21     GPIOC->ODR &= ~GPIO_ODR_ODR5;
22     //Turn the echo to start at 0
23     GPIOB->IDR &= ~GPIO_IDR_IDR7;
24
25 }
26
27 int sensorControl(void)
28 {
29     int counter = 0;
30     GPIOC->ODR &= ~GPIO_ODR_ODR5;
31     delay(30);
32     GPIOC->ODR |= GPIO_ODR_ODR5;
33     delay(60);
34     GPIOC->ODR &= ~GPIO_ODR_ODR5;
35     delay(60);
36
37     while ((GPIOB->IDR & GPIO_IDR_IDR7) == 0x00){
38
39     }
40
41     while ((GPIOB->IDR & GPIO_IDR_IDR7) != 0x00){
42         counter++;
43         delay(60);
44     }
45
46     //Returns 340m/s * counter divided by 2. Converted into microsecond
47     return counter;
48 }
```