Ultra sonic sensor

```
#include <stdio.h>
#include <stdbool.h>
#include <freertos/FreeRTOS.h>
#include <freertos/task.h>
#include <esp_err.h>
#include "ultrasonic.h"
#define ECHO_GPIO 12
#define TRIGGER GPIO 13
#define MAX DISTANCE CM 500 // Maximum of 5 meters
void ultrasonic test(void *pvParameters)
    float distance;
    ultrasonic_sensor_t sensor = {
        .trigger pin = TRIGGER GPIO,
        .echo_pin = ECHO_GPIO
    };
    ultrasonic_init(&sensor);
    while (true) {
        esp_err_t res = ultrasonic_measure(&sensor, MAX_DISTANCE_CM, &distance);
        if (res == ESP_OK) {
            printf("Distance: %0.04f m\n", distance);
        } // Print error
        else {
            printf("Error %d: ", res);
            switch (res) {
                case ESP ERR ULTRASONIC PING:
                    printf("Cannot ping (device is in invalid state)\n");
                    break;
                case ESP_ERR_ULTRASONIC_PING_TIMEOUT:
                    printf("Ping timeout (no device found)\n");
                    break;
                case ESP_ERR_ULTRASONIC_ECHO_TIMEOUT:
                    printf("Echo timeout (i.e. distance too big)\n");
```

```
break;
                             default:
                                    printf("%s\n", esp_err_to_name(res));
                      }
              }
              vTaskDelay(pdMS_TO_TICKS(500));
       }
}
void app_main()
{
       xTaskCreate(ultrasonic_test, "ultrasonic_test", configMINIMAL_STACK_SIZE * 3,
NULL, 5, NULL);
}
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                                            esp_idf_lib_helpers.h Library Manager
  main.c
                                                                                                                                    (3) 00:04.964 (4) 25%
         #include <stdio.h>
         #include <stdbool.h>
         #include <freertos/FreeRTOS.h>
         #include <freertos/task.h>
         #include <esp_err.h>
         #include "ultrasonic.h"
         #define ECHO_GPIO 12
         #define TRIGGER GPIO 13
         #define MAX_DISTANCE_CM 500 // Maximum of 5 meters
    13
14
         void ultrasonic_test(void *pvParameters)
    15
16
            float distance;
            ultrasonic_sensor_t sensor = {
   .trigger_pin = TRIGGER_GPIO,
    17
18
    19
20
               .echo_pin = ECHO_GPIO
                                                                          Distance: 4.0564 m
                                                                          Distance: 4.0564 m
    21
            ultrasonic_init(&sensor);
                                                                          Distance: 4.0566 m
    23
24
                                                                          Distance: 4.0566 m
               esp_err_t res = ultrasonic_measure(&sensor, MAX_DISTANCE_CM, &distance Distance: 4.0564 m
    25
                                                                          Distance: 4.0564 m
    27
               if (res == ESP_OK) {
                                                                          Distance: 4.0564 m
               printf("Distance: %0.04f m\n", distance);
} // Print error
```