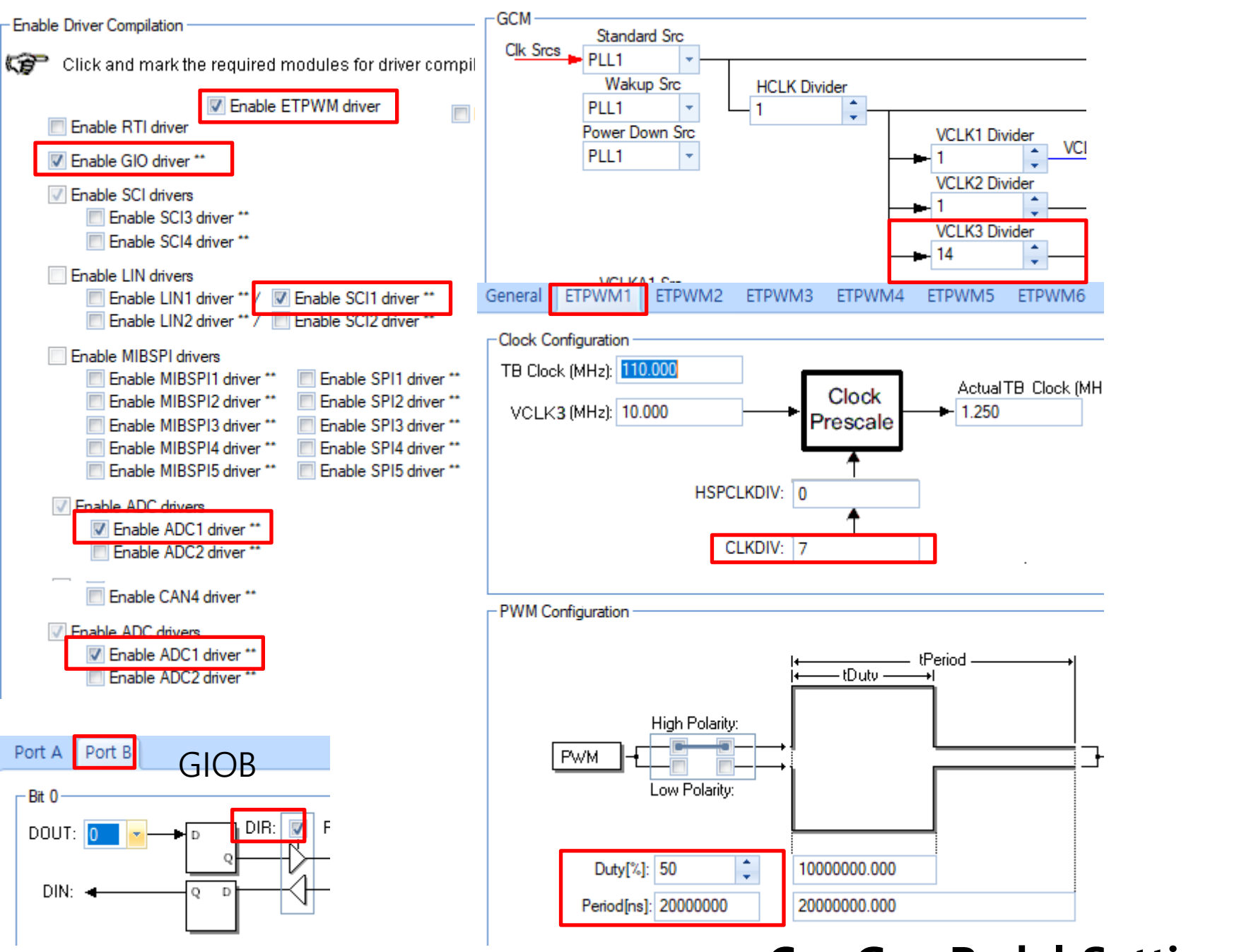
Xilinx
Zynq FPGA
TI DSP MCU 기반의
프로그래밍 및 회로 설계 전문가

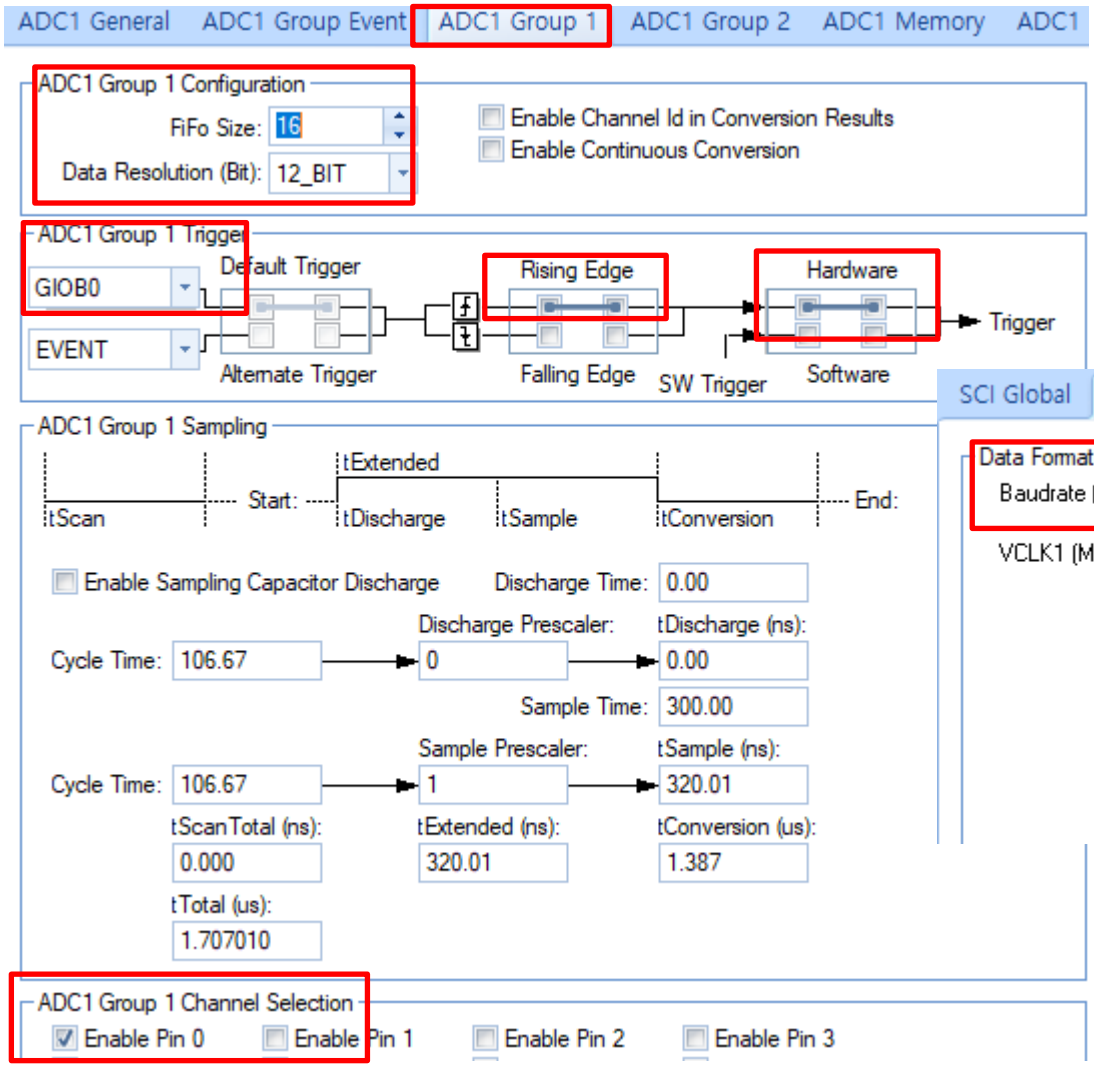
강사 이상훈
gcccompil3r@gmail.com

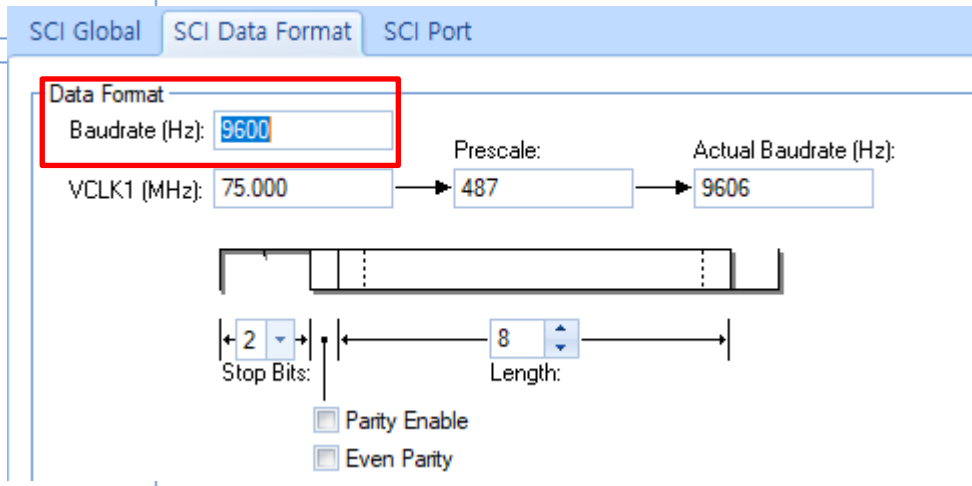
학생 김민호
minking12@naver.com



Car Gas Pedal Setting

Car Gas Pedal Setting



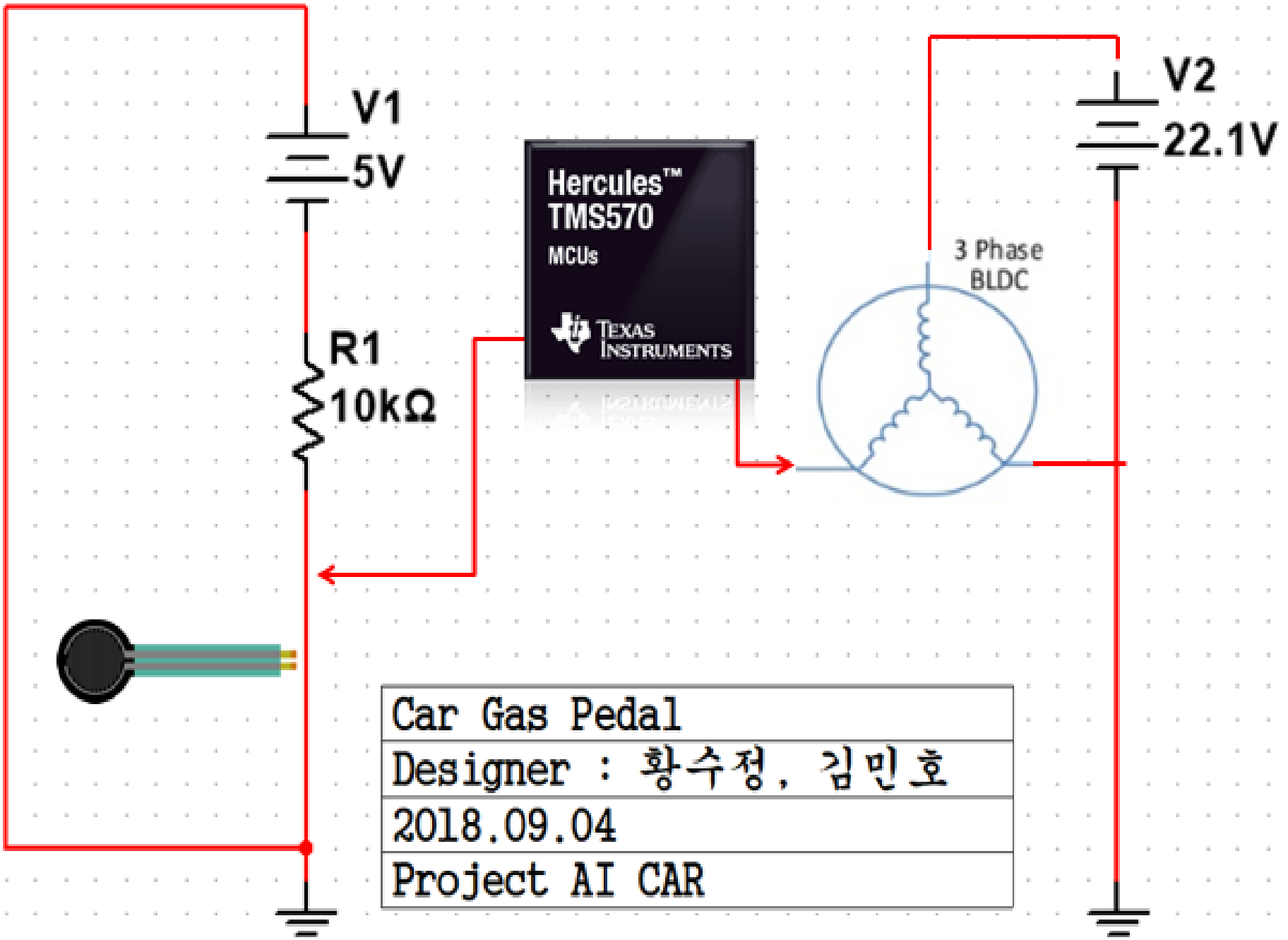


```c
#include <HL_adc.h>
#include <HL_gio.h>
#include <HL_hal_stdtypes.h>
#include <HL_reg_adc.h>
#include <HL_reg_gio.h>
#include <HL_reg_sci.h>
#include <HL_sci.h>
#include <HL_etpwm.h>
#include <HL_reg_etpwm.h>
void send_data(sciBASE_t *sci, uint8 *msg, uint32 length)
{
    int i;
    for (i = 0; i < length; i++)
    {
        sciSendByte(sciREG1, msg[i]);
    }
}
void mortor(int rpm)
{

    if (0 <= rpm && rpm <= 500)
    {
        etpwmREG1->CMPA = 1540 * 1.25;
    }
    else if (501 <= rpm && rpm <= 1000)
    {
        etpwmREG1->CMPA = 1550 * 1.25;
    }
    else if (1001 <= rpm && rpm <= 1500)
    {
        etpwmREG1->CMPA = 1560 * 1.25;
    }
    else if (1501 <= rpm && rpm <= 2000)
    {
        etpwmREG1->CMPA = 1570 * 1.25;
    }
    else if (2001 <= rpm && rpm <= 2500)
    {
        etpwmREG1->CMPA = 1580 * 1.25;
    }
    else if (2501 <= rpm && rpm <= 3000)
    {
        etpwmREG1->CMPA = 1590 * 1.25;
    }
    else if (3001 <= rpm && rpm <= 4000)
    {
        etpwmREG1->CMPA = 1600 * 1.25;
    }
}
void delay(int EE)
{
    int i;
    for (i = 0; i < EE; i++)
    {
        ;
    }
}

void main(void)
{
    adcData_t counter;
    uint8 msg[32] = { 0, };
    uint32 value = 0;
    etpwmInit();
    etpwmStartTBCLK();
    sciInit();
    gioInit();
    adcInit();
    adcStartConversion(adcREG1, adcGROUP1);
    gioSetBit(gioPORTB, 0, 0);
    etpwmREG1->CMPA = 1500 * 1.25;
    while (1)
    {
        gioSetBit(gioPORTB, 0, 1);
        while (adcIsConversionComplete(adcREG1, adcGROUP1) == 0)
            ;
        adcGetData(adcREG1, adcGROUP1, &counter);
        sprintf(msg, "value = %dWrWn", counter.value);
        send_data(sciREG1, msg, strlen(msg));
        mortor(counter.value);
        delay(9000000);
        gioSetBit(gioPORTB, 0, 0);
    }
}
```

Car Gas Pedal Setting


V1
5V
R1
10kΩ
Hercules™
TMS570
MCUs
Texas Instruments
3 Phase
BLDC
V2
22.1V
Car Gas Pedal
Designer : 황수정, 김민호
2018.09.04
Project AI CAR

COM4 - PuTTY

```
value = 3607
value = 3534
value = 3505
value = 3479
value = 3489
value = 3288
value = 3219
value = 3520
value = 3578
value = 3460
value = 3432
value = 3275
value = 3069
value = 3349
value = 3358
value = 3365
value = 3422
value = 3396
value = 3393
value = 3313
value = 3319
value = 3347
value = 3478
value = 3544
value = 283
value = 139
value = 1062
value = 1215
value = 2140
value = 3160
value = 3109
value = 1713
value = 83
value = 1165
value = 1296
value = 1171
value = 1296
value = 1663
value = 1791
value = 2346
value = 2668
value = 3224
value = 3287
value = 522
value = 122
value = 101
value = 924
value = 1029
value = 1513
value = 1919
value = 2385
value = 2689
value = 2917
value = 3195
value = 3370
value = 50
value = 86
value = 93
value = 94
value = 86
value = 98
value = 102
value = 135
value = 103
value = 94
value = 96
```