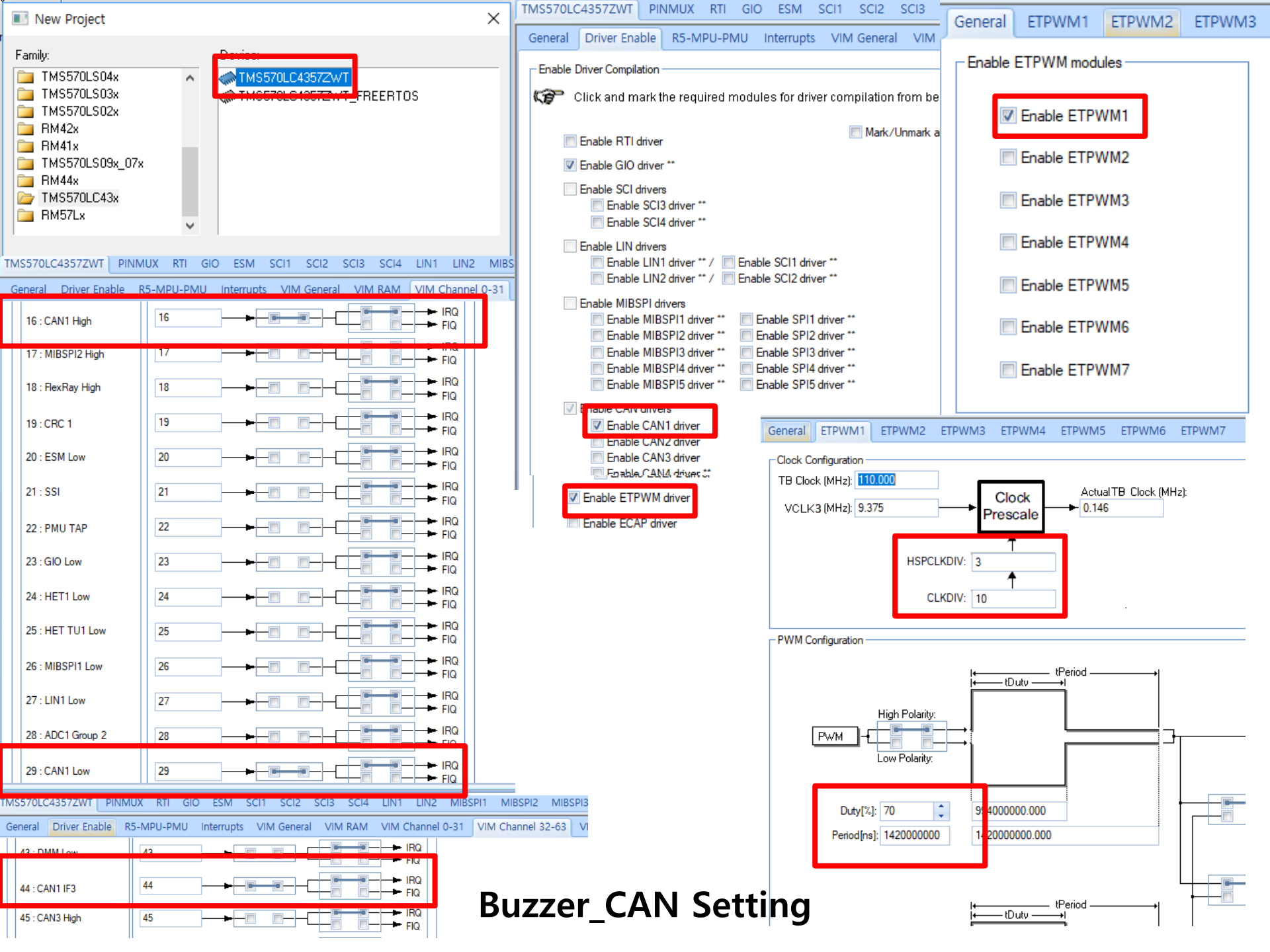
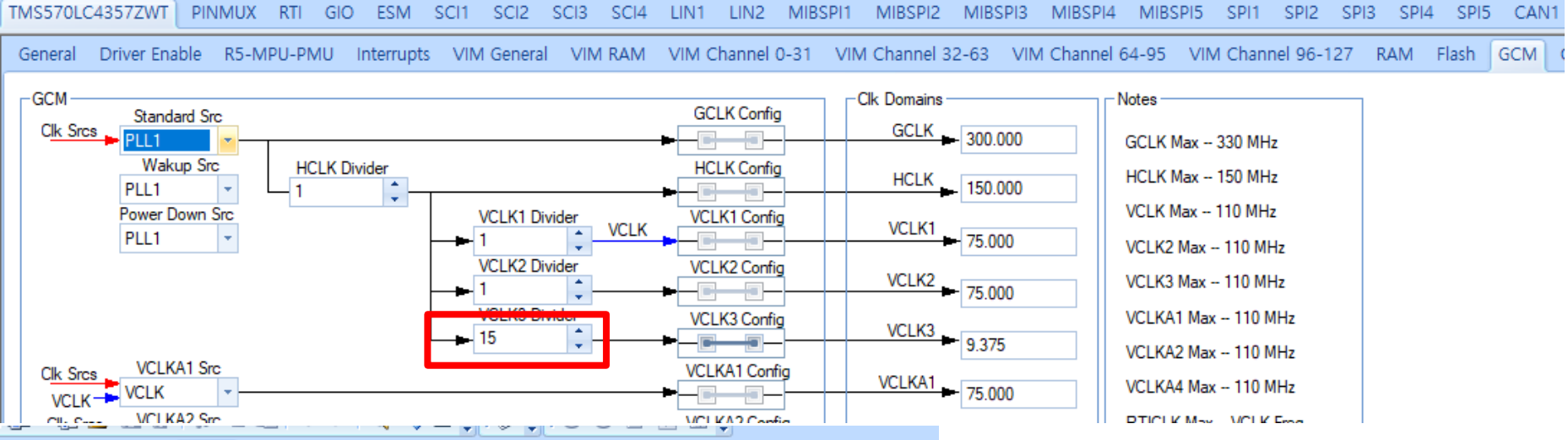
Xilinx
Zynq FPGA
TI DSP MCU 기반의
프로그래밍 및 회로 설계 전문가

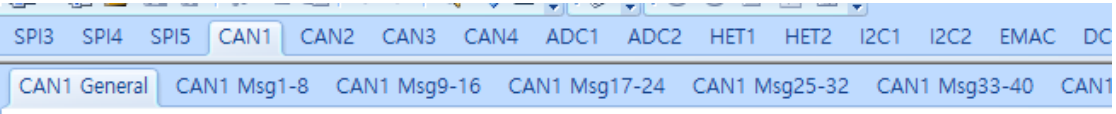
강사 이상훈
gcccompil3r@gmail.com

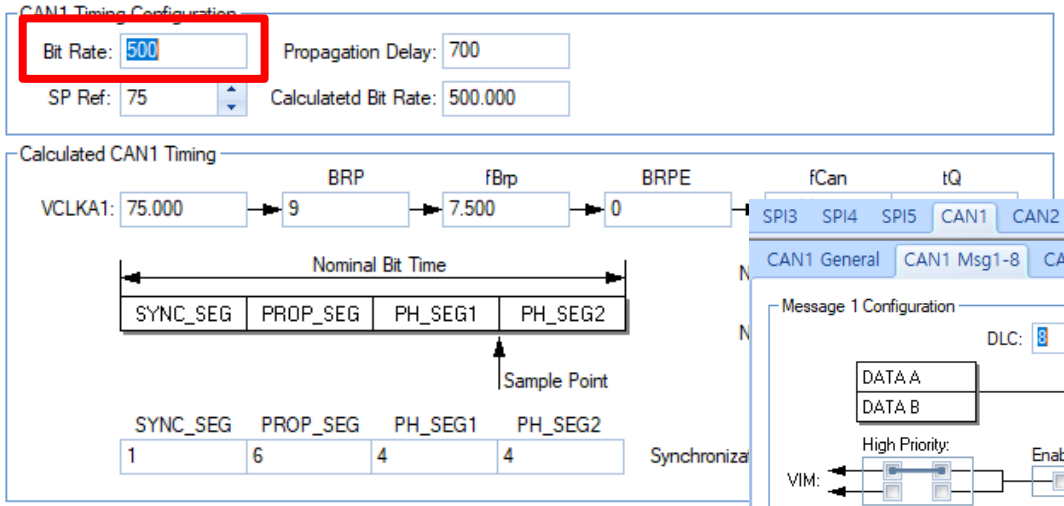
학생 김민호
minking12@naver.com

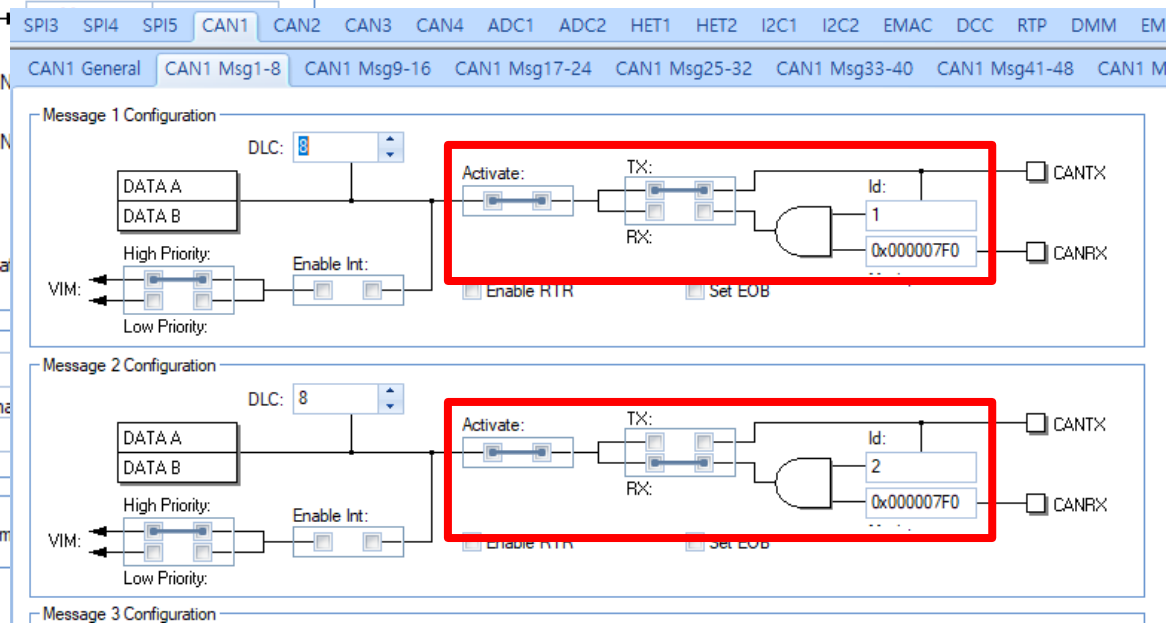

New Project
Family:
TMS570LS04x
TMS570LS03x
TMS570LS02x
RM42x
RM41x
TMS570LS09x_07x
RM44x
TMS570LC43x
RM57Lx
Device:
TMS570LC4357ZWT
TMS570LC4357ZWT_FREERTOS
TMS570LC4357ZWT PINMUX RTI GIO ESM SCI1 SCI2 SCI3 SCI4 LIN1 LIN2 MIBS
General Driver Enable R5-MPU-PMU Interrupts VIM General VIM RAM VIM Channel 0-31
16 : CAN1 High
17 : MIBSPI2 High
18 : FlexRay High
19 : CRC 1
20 : ESM Low
21 : SSI
22 : PMU TAP
23 : GIO Low
24 : HET1 Low
25 : HET TU1 Low
26 : MIBSPI1 Low
27 : LIN1 Low
28 : ADC1 Group 2
29 : CAN1 Low
IRQ
FIQ
TMS570LC4357ZWT PINMUX RTI GIO ESM SCI1 SCI2 SCI3 SCI4 LIN1 LIN2 MIBSPI1 MIBSPI2 MIBSPI3
General Driver Enable R5-MPU-PMU Interrupts VIM General VIM RAM VIM Channel 0-31 VIM Channel 32-63
44 : CAN1 IF3
45 : CAN3 High
TMS570LC4357ZWT PINMUX RTI GIO ESM SCI1 SCI2 SCI3
General Driver Enable R5-MPU-PMU Interrupts VIM General VIM
Enable Driver Compilation
Click and mark the required modules for driver compilation from be
Mark/Unmark a
Enable RTI driver
Enable GIO driver **
Enable SCI drivers
Enable SCI3 driver **
Enable SCI4 driver **
Enable LIN drivers
Enable LIN1 driver ** / Enable SCI1 driver **
Enable LIN2 driver ** / Enable SCI2 driver **
Enable MIBSPI drivers
Enable MIBSPI1 driver ** Enable SPI1 driver **
Enable MIBSPI2 driver ** Enable SPI2 driver **
Enable MIBSPI3 driver ** Enable SPI3 driver **
Enable MIBSPI4 driver ** Enable SPI4 driver **
Enable MIBSPI5 driver ** Enable SPI5 driver **
Enable CAN1 driver
Enable CAN2 driver
Enable CAN3 driver
Enable ETPWM driver
Enable ECAP driver
General ETPWM1 ETPWM2 ETPWM3
Enable ETPWM modules
Enable ETPWM1
Enable ETPWM2
Enable ETPWM3
Enable ETPWM4
Enable ETPWM5
Enable ETPWM6
Enable ETPWM7
General ETPWM1 ETPWM2 ETPWM3 ETPWM4 ETPWM5 ETPWM6 ETPWM7
Clock Configuration
TB Clock (MHz): 110.000
VCLK3 (MHz): 9.375
Clock Prescale
Actual TB Clock (MHz): 0.146
HSPCLKDIV: 3
CLKDIV: 10
PWM Configuration
tPeriod
tDuty
High Polarity:
PWM
Low Polarity:
Duty[%]: 70
Period[ns]: 1420000000
Buzzer_CAN Setting

Buzzer_CAN Setting





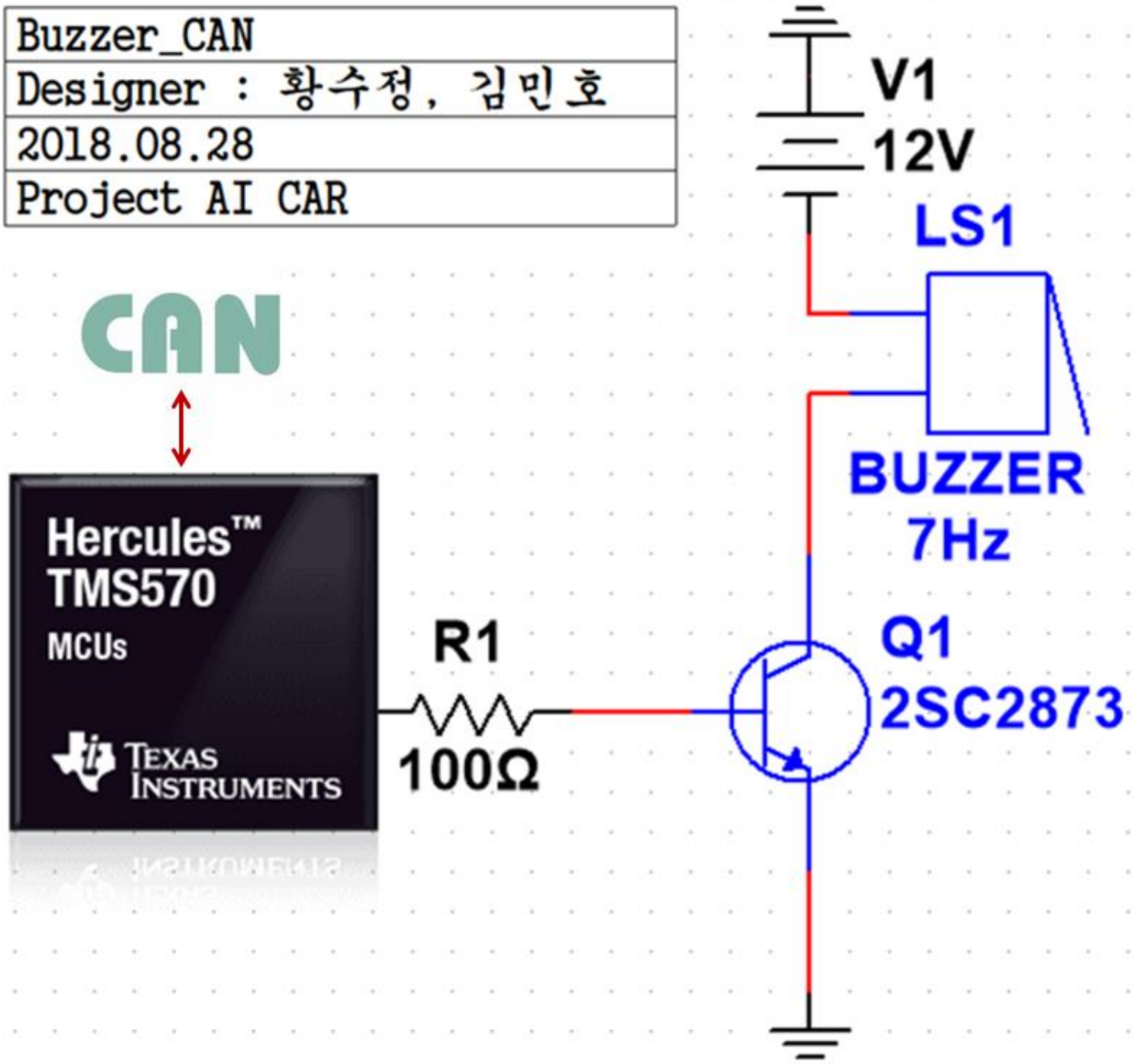




```
#include <HL_can.h>
#include <HL_etpwm.h>
#include <HL_reg_can.h>
#include <HL_reg_etpwm.h>
#include <stdio.h>

char tr;
char re;

void delay(int time)
{
    int i;
    for (i = 0; i < time; i++)
        ;
}

int main()
{
    canInit();
    etpwmInit();

    while (1)
    {
        delay(1000000);
        canTransmit(canREG1, canMESSAGE_BOX1, &tr);
        delay(10000000);

        if (canIsRxMessageArrived(canREG1, canMESSAGE_BOX2))
        {
            canGetData(canREG1, canMESSAGE_BOX2, &re);
            printf("rx =%d₩n", re);
            switch (re)
            {
case 5:
                etpwmStartTBCLK();
                etpwmREG1->CMPA = 2300;
                    break;

default:
                etpwmStopTBCLK();
                break;
            }
        }

    }
}
```

Buzzer_CAN CODE

Buzzer_CAN
Designer : 황수정, 김민호
2018.08.28
Project AI CAR



USB2CAN UI

NTREX ㈜엔티렉스

USB2CAN UI

Version 1.10 (2016. 9. 20)

UI Config.

USB(VCP) Devices

NTREX USB2CAN(FIFO) [NT2ASDZL]

Search

Connect

Disconnect

CAN Configuration

Bitrate: 500K bps

Filter Identification: 1 (Hexa)

Filter Mask: 7F0 (Hexa)

Set

CAN Messages

Time	ID(Hex)	Flags	Data(Hex)
192794.327211	1	Ext	00 00 00 00 00 00 00 00 (8)
192793.925464	1	Ext	00 00 00 00 00 00 00 00 (8)
192793.521720	1	Ext	00 00 00 00 00 00 00 00 (8)
192793.117978	1	Ext	00 00 00 00 00 00 00 00 (8)
192792.714249	1	Ext	00 00 00 00 00 00 00 00 (8)
192792.311418	1	Ext	00 00 00 00 00 00 00 00 (8)
192791.907691	1	Ext	00 00 00 00 00 00 00 00 (8)
192791.503999	1	Ext	00 00 00 00 00 00 00 00 (8)
192791.101188	1	Ext	00 00 00 00 00 00 00 00 (8)
192790.697500	1	Ext	00 00 00 00 00 00 00 00 (8)
192789.566079	1	Self Ext	05 (1)
192789.276441	1	Ext	00 00 00 00 00 00 00 00 (8)
192788.873624	1	Ext	00 00 00 00 00 00 00 00 (8)
192788.469861	1	Ext	00 00 00 00 00 00 00 00 (8)
192788.067197	1	Ext	00 00 00 00 00 00 00 00 (8)
192787.664419	1	Ext	00 00 00 00 00 00 00 00 (8)
192787.260686	1	Ext	00 00 00 00 00 00 00 00 (8)

Receive CAN Message

Clear

Transmit Message

ID(Hexa)	1	Ext	RTR	Data(Hexa)	5	Send
ID(Hexa)	1	Ext	RTR	Data(Hexa)	1	Send
ID(Hexa)	0	Ext	RTR	Data(Hexa)		Send