

MCU (hetPwm사용)

* Duty : 50% → 70%

* RTI 사용

Generator - /home/jsg/workspace_v7/het_pwm/het_p

Start Page RM57L843ZWT PINMUX RTI GIO ESM SCI1 SCI2 SCI3 SCI4 LIN1 LIN2 MIBSPI1

RTI1 General RTI1 Counter 0 RTI1 Counter 1 RTI1 Compare

General Driver Enable R5-MPU-PMU Interrupts VIM General VIM

Enable Driver Compilation

Click and mark the required modules for driver compilation from

☒ Enable RTI driver ☐ Mark/Unm

☐ 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 CAN drivers

☐ Enable CAN1 driver

☐ Enable CAN2 driver

☐ Enable CAN3 driver

☐ Enable CAN4 driver **

☐ Enable ADC drivers

☐ Enable ADC1 driver **

☐ Enable ADC2 driver **

☒ Enable HET drivers

☒ Enable HET1 driver **

☐ Enable HET2 driver **

RTI1 Compare

Compare 0 Period: 3000 Update Compare 0: 28125000

Compare 0: 28125000

Comp 0 Source:

Counter 0: ☐ Counter 1: ☐

9.37500000

Actual Period (ms): 3000.000

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General Driver Enable R5-MPU-PMU Interrupts VIM General VIM RAM VIM Channel 0-31

VIM Channel 0-31 Configuration

Interrupt Assignment

0 : ESM High

1 : Reserved

2 : RTI Compare 0

CHANMAPO-CHANMAP31

0

1

2

IRQ

IRQ

IRQ

IRQ

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HET1 Global Timing Configuration Pwm 0-7 Pwm Interrupts Edge 0-7 Edge Interrupts Cap 0-7 Pin

PWM 0

High Polarity: ☐ Low Polarity: ☒

Duty [%]: 50

Period [us]: 1000.000

501.333

1000.534

Enable: ☐

Pin: 8

HET[x]

PWM 1

High Polarity: ☐ Low Polarity: ☒

Duty [%]: 50

Period [us]: 100.000

501.333

1000.534

Enable: ☐

Pin: 10

HET[x]

```
#include "HL_sys_common.h"
#include "HL_system.h"
#include "HL_het.h"
#include "HL_rti.h"

void main(void)
{
    rtiInit();
    hetInit();

    rtiEnableNotification(rtiREG1,rtiNOTIFICATION_COMPARE0);
    _enable_IRQ_interrupt_();
    rtiStartCounter(rtiREG1,rtiCOUNTER_BLOCK0);

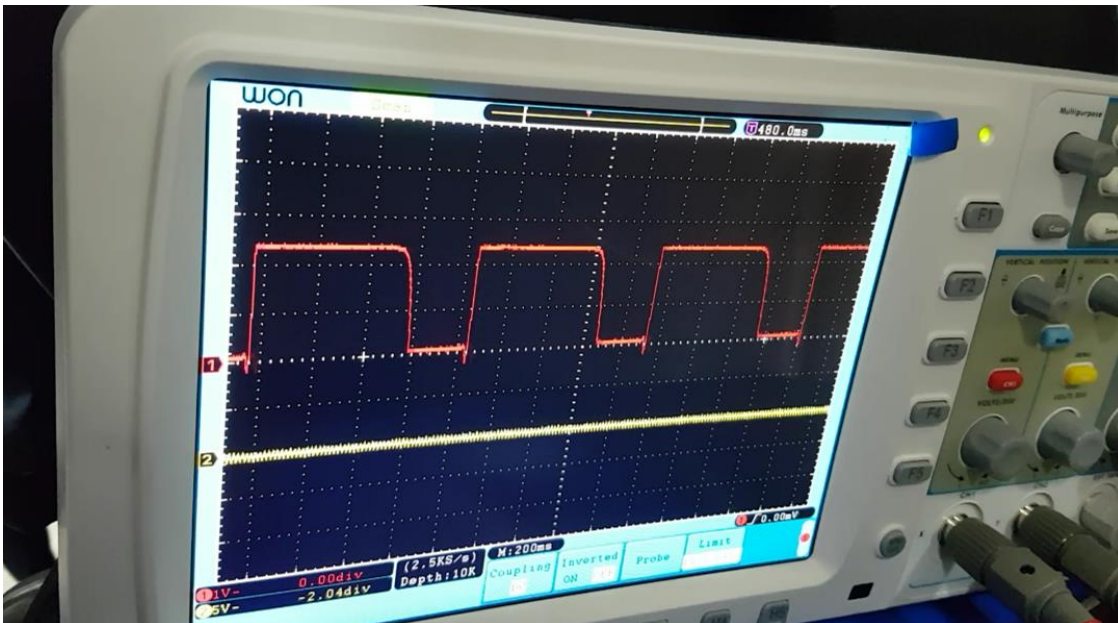
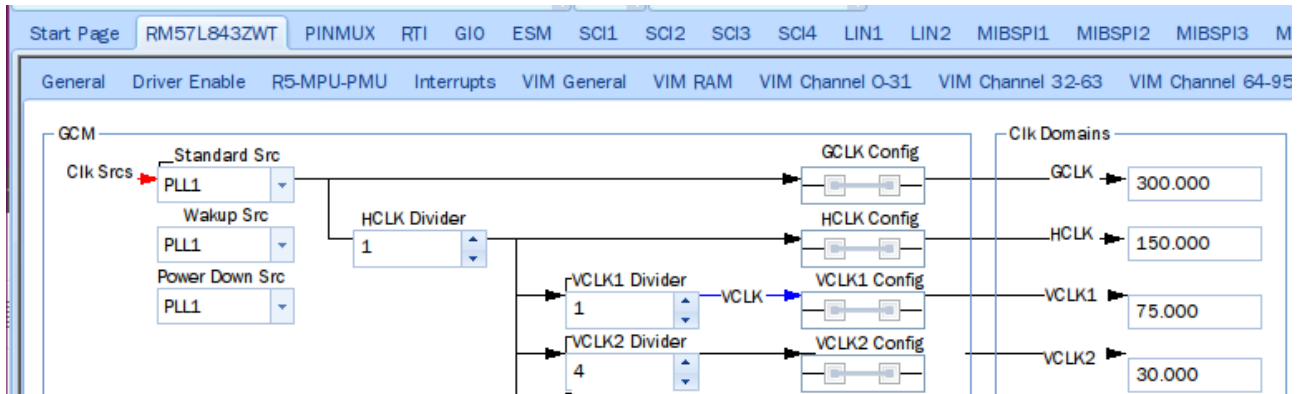
    while(1)
        ;
}

void rtiNotification(rtiBASE_t *rtiREG, uint32 notification)
{
    pwmSetDuty(hetRAM1, pwm1, 70);
}
```

MCU

주파수 변경 : 30

VCLK2 Divider: 1 → 4



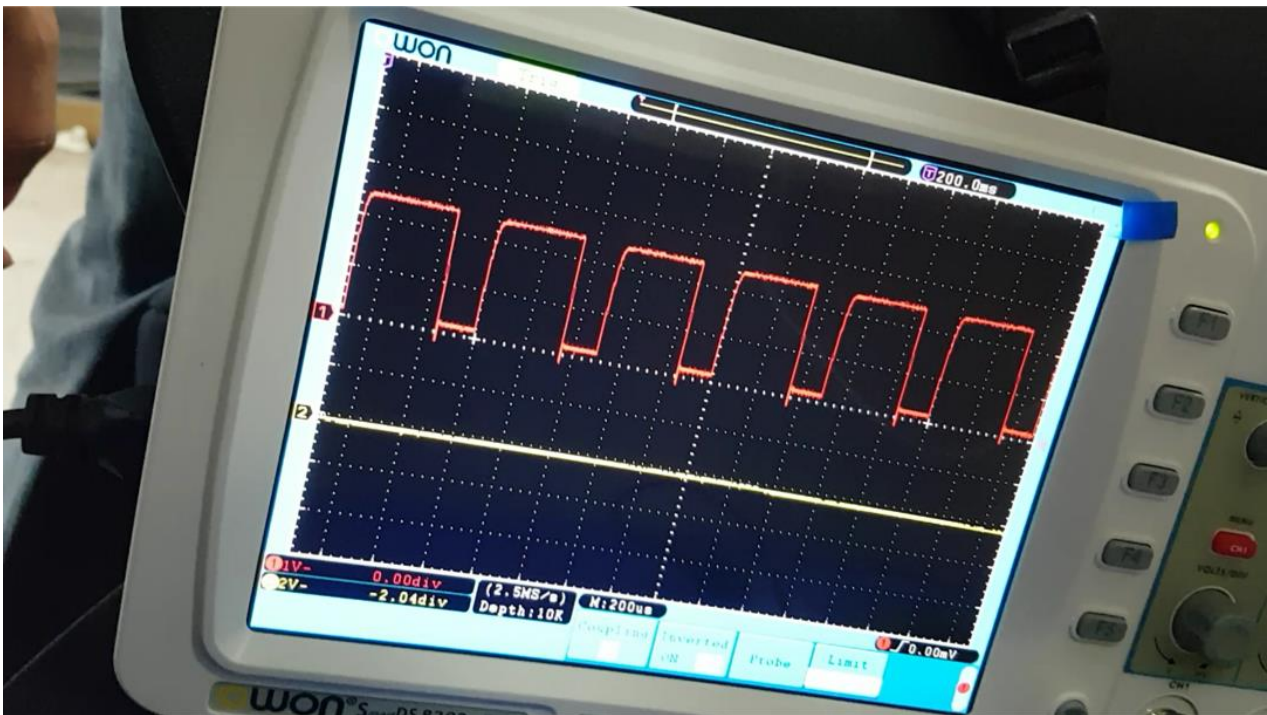
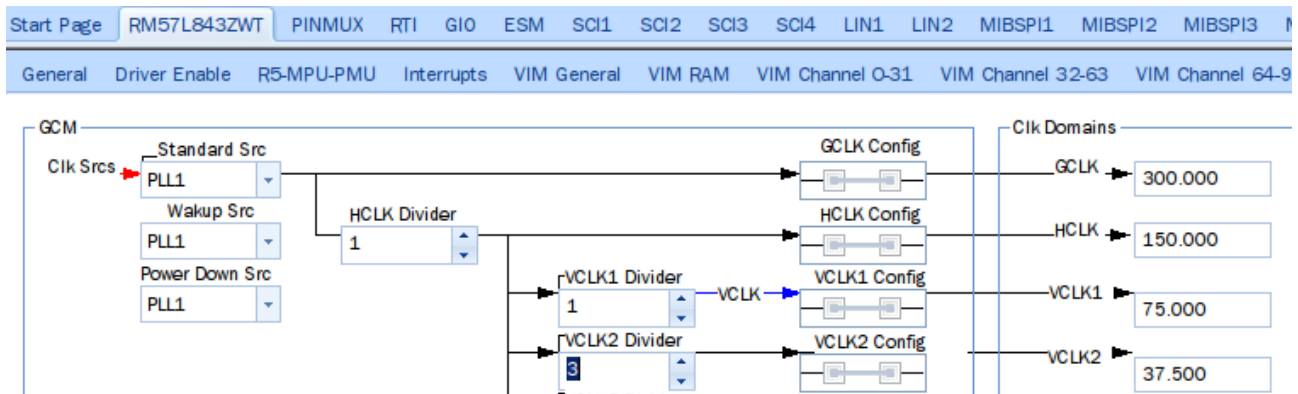
주기 : 800 + a m/s

펄스 폭 : 600m/s

MCU

주파수 변경 : 37.5

VCLK2 Divider: 1 → 4



주기 : 500u/s

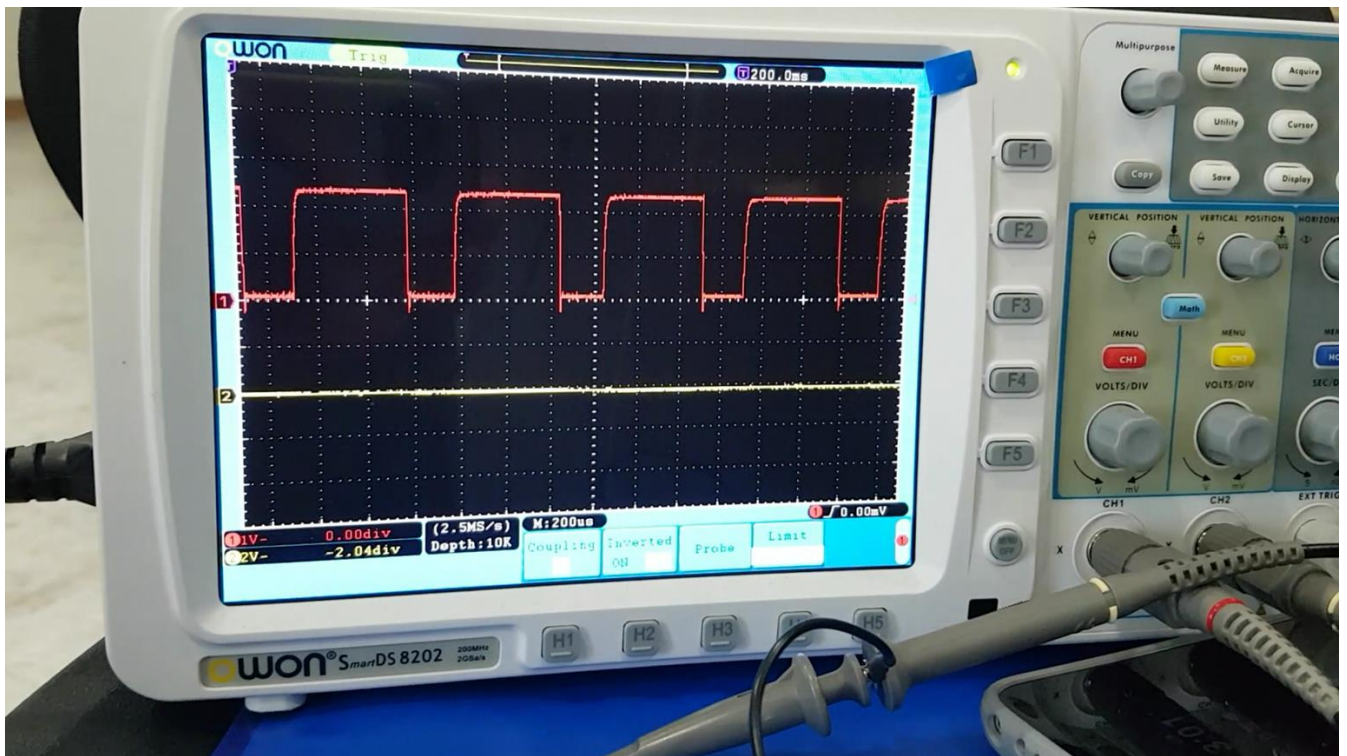
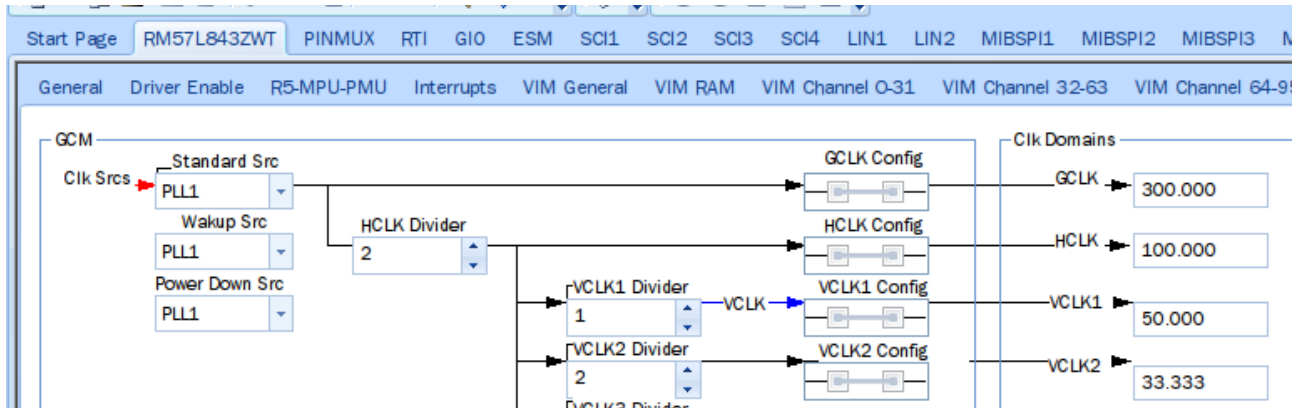
펄스 폭 : 300u/s

MCU

주파수 변경 : 33.333333

HCLK Divider : 1 → 2

VCLK2 Divider: 1 → 2



주기 : 600 + a u/s

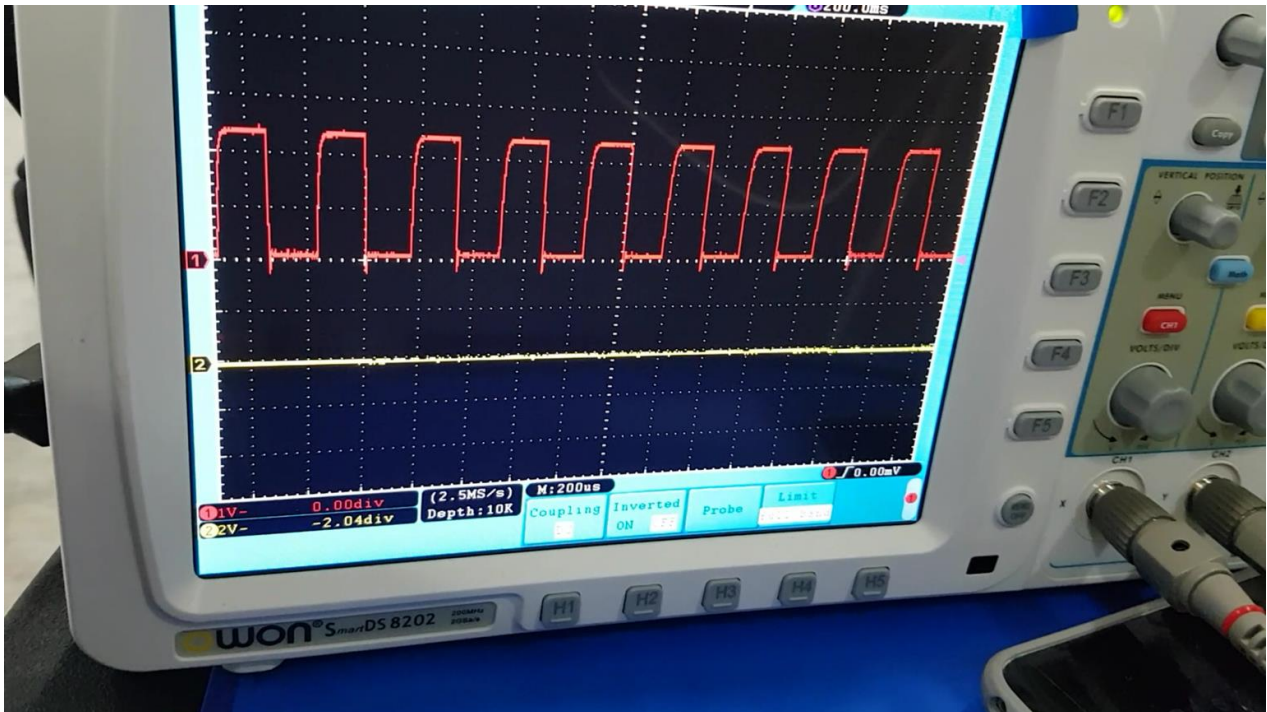
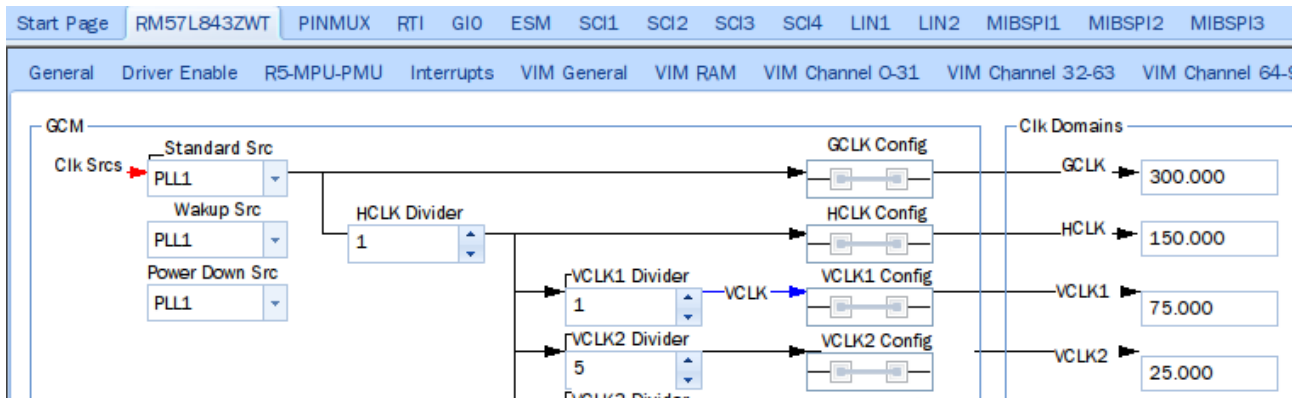
펄스 폭 : 400u/s

MCU

주파수 변경 : 25

HCLK Divider : 1

VCLK2 Divider: 1 → 5



주기 : 350 + a u/s

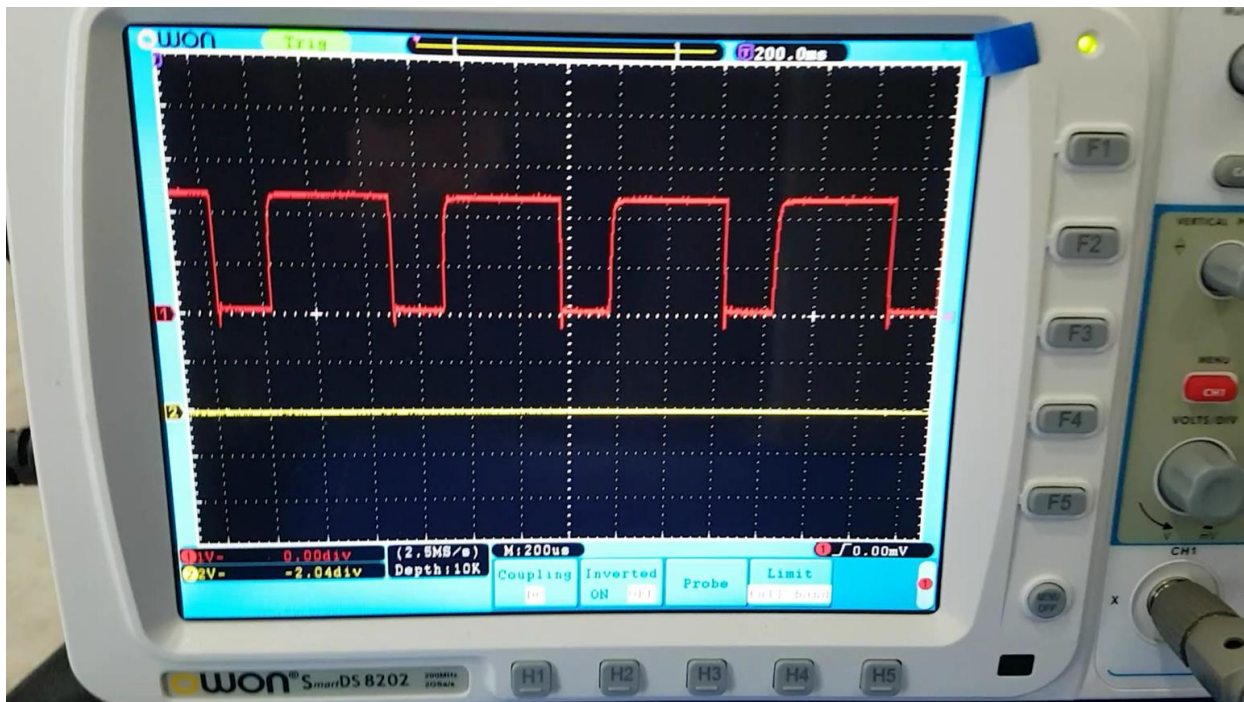
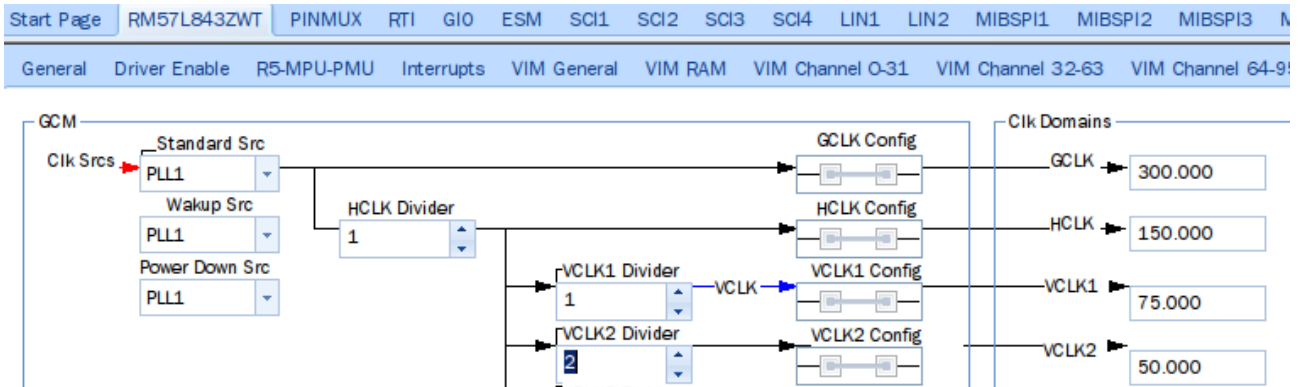
펄스 폭 : 200 + a u/s

MCU

주파수 변경 : 50

HCLK Divider : 1

VCLK2 Divider: 1 → 2



주기 : 700 u/s

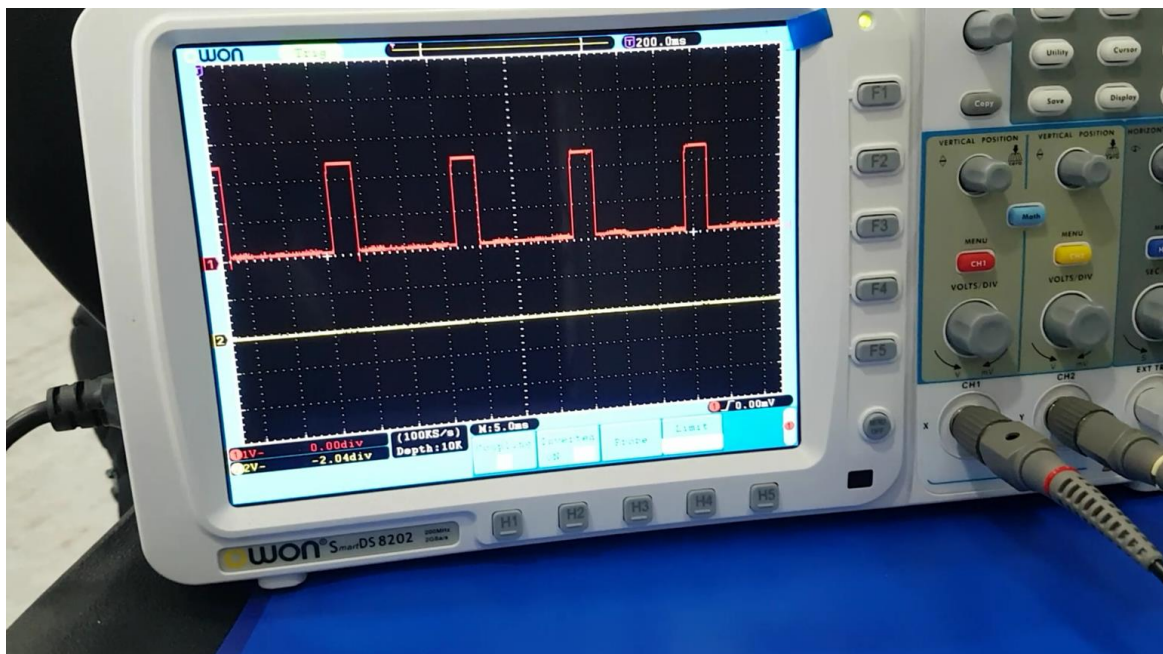
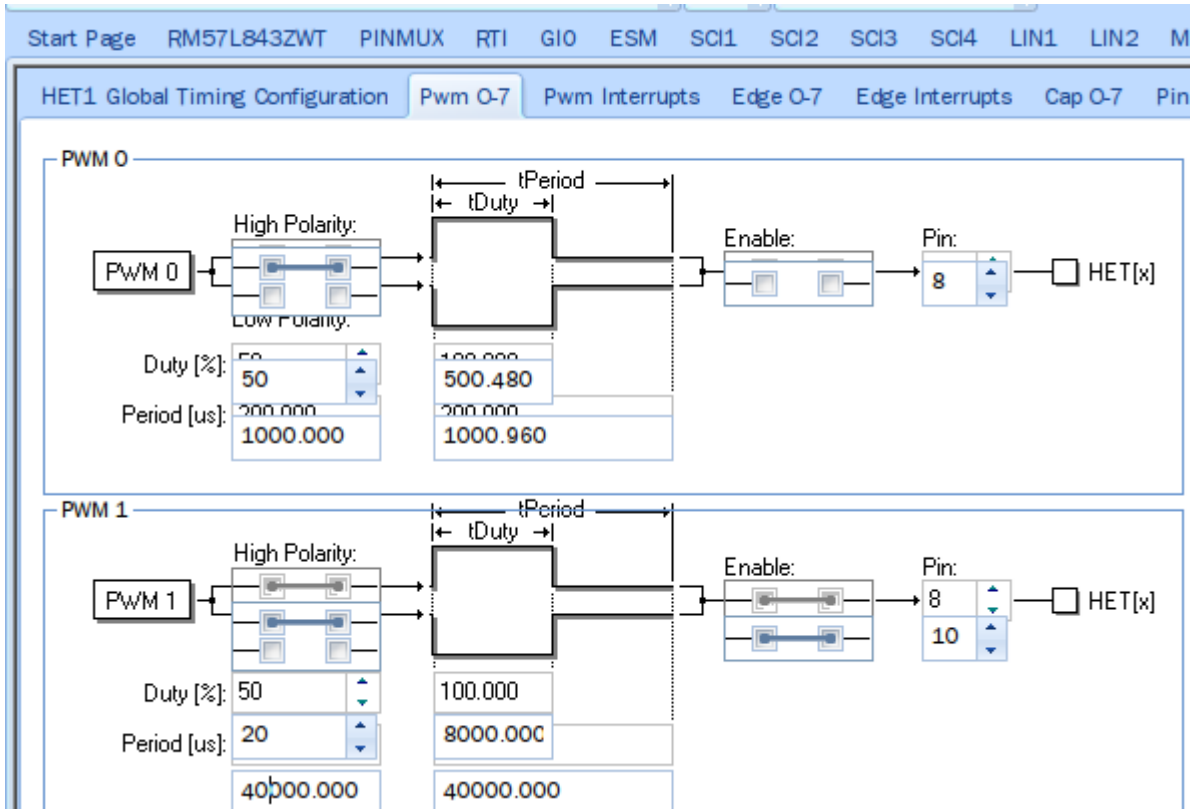
펄스 폭 : 400 + a u/s

MCU

Duty 변경 : 20

Period[us] 변경 : 40000.000

PWM1을 Enable



주기 : 16 m/s

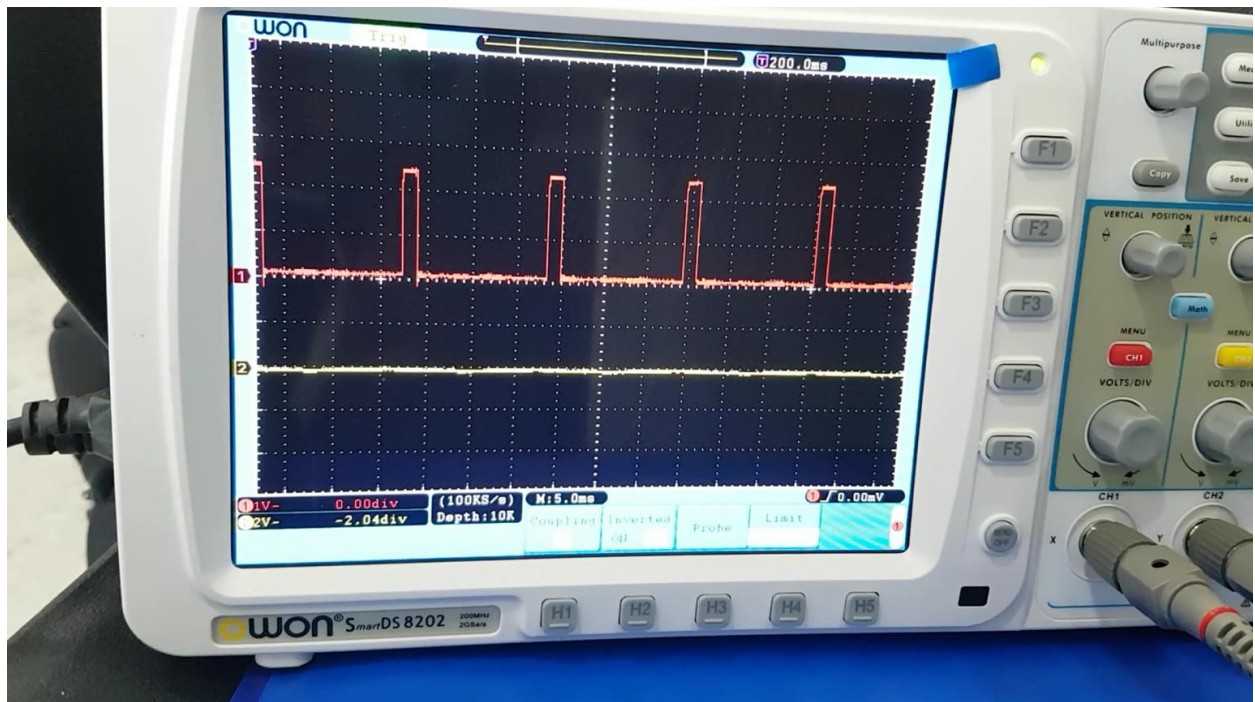
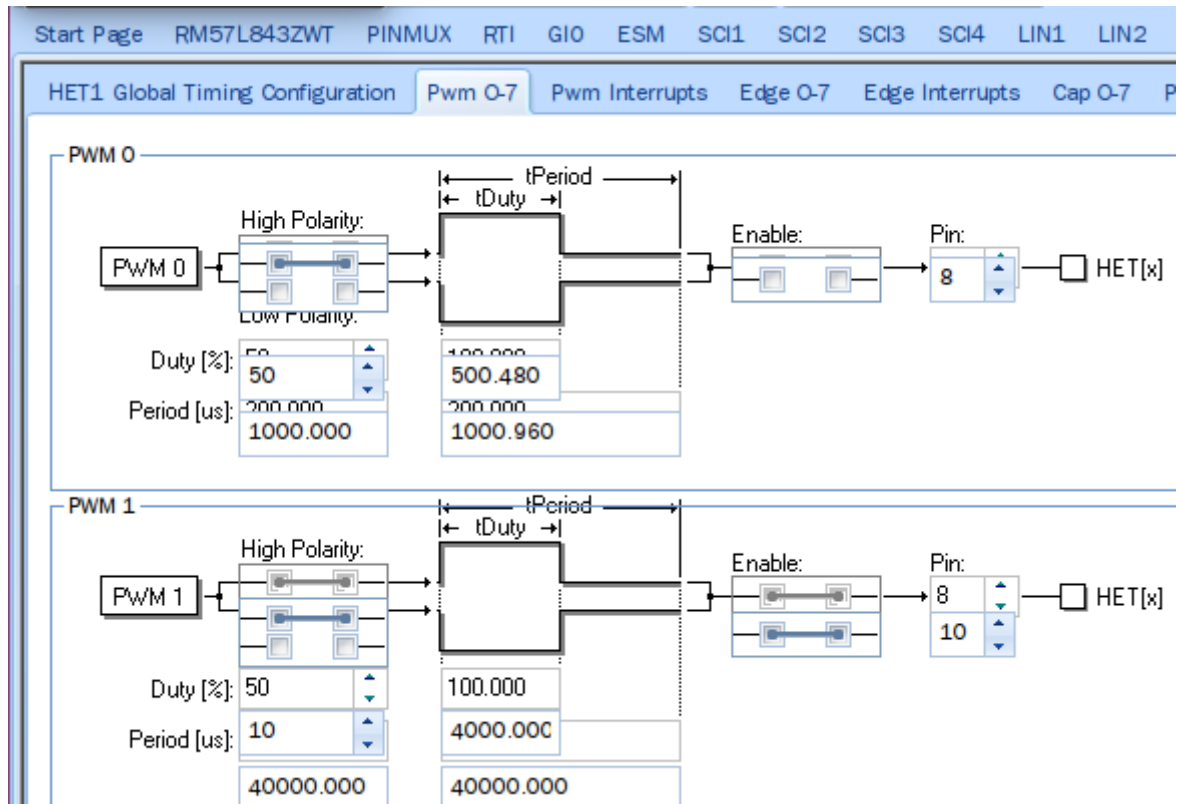
펄스 폭 : 3 m/s

MCU

Duty 변경 : 20

Period[us] 변경 : 40000.000

PWM1을 Enable



주기 : 16 m/s

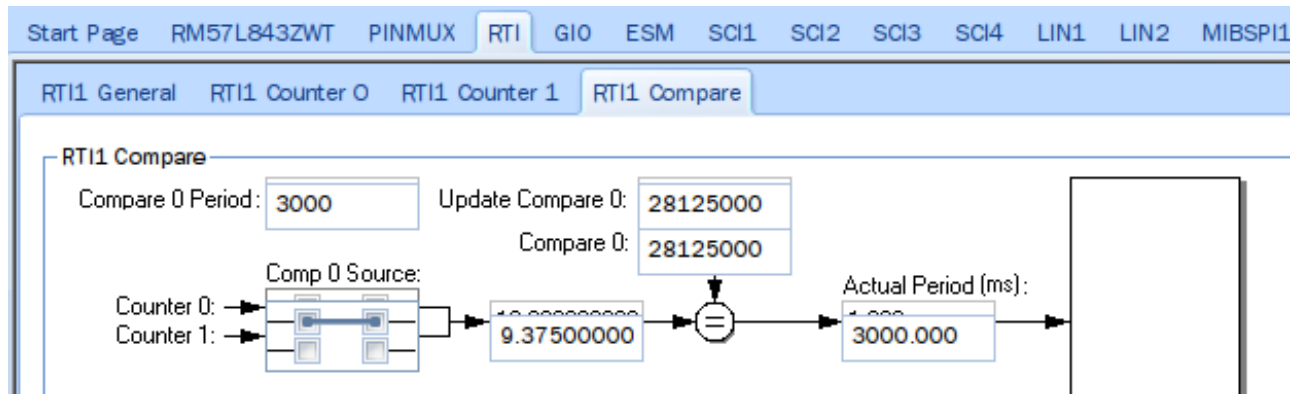
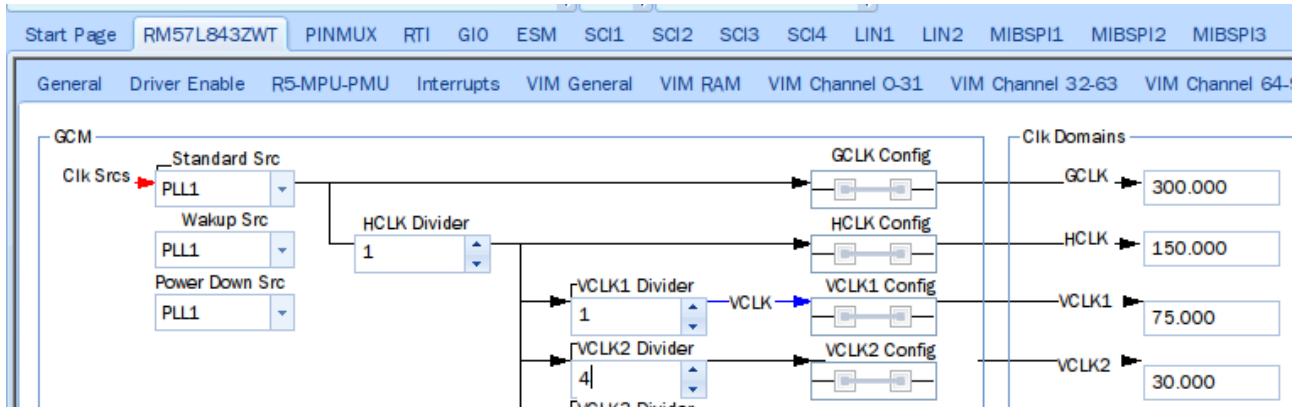
펄스 폭 : 2 m/s

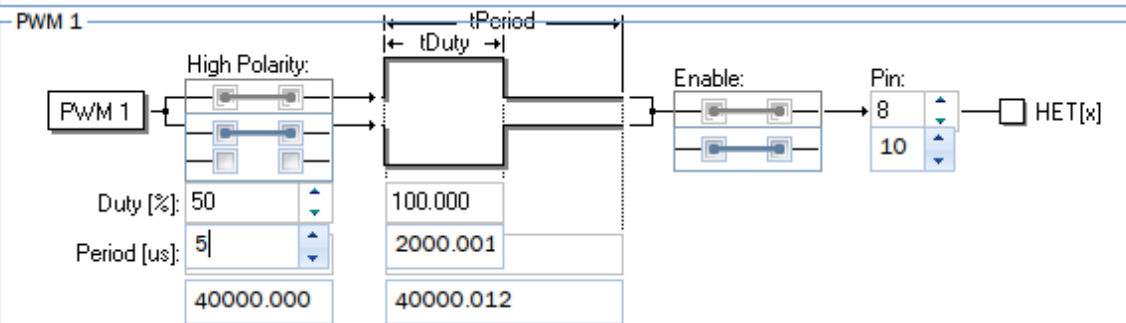
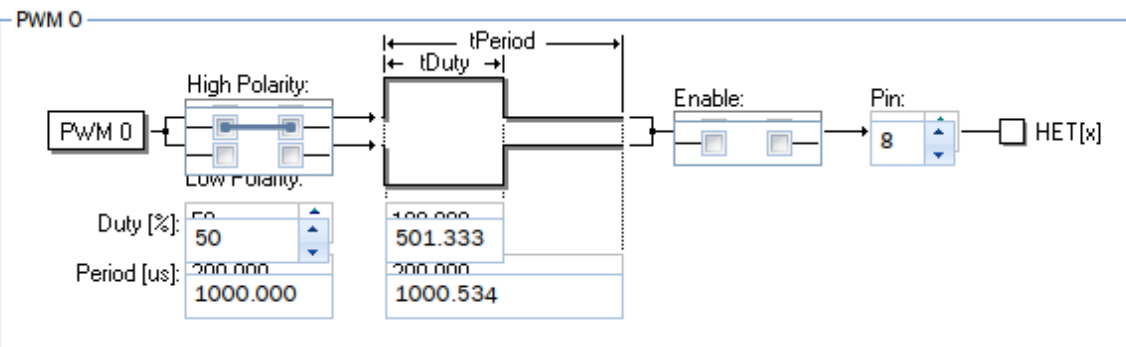
MCU

Compare 0 Period 변경 : 3000

Period[us] 변경 : 40000.000

PWM1을 Enable, CCS 소스 변경





```

#include "HL_sys_common.h"
#include "HL_system.h"
#include "HL_het.h"
#include "HL_rti.h"

void main(void)
{
    rtiInit();
    hetInit();

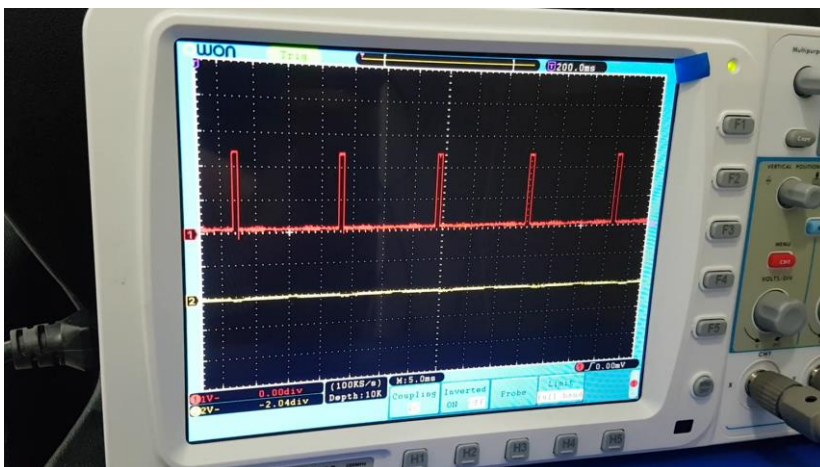
    rtiEnableNotification(rtiREG1,rtiNOTIFICATION_COMPARE0);
    _enable_IRQ_interrupt_();
    rtiStartCounter(rtiREG1,rtiCOUNTER_BLOCK0);

    while(1)
        ;
}

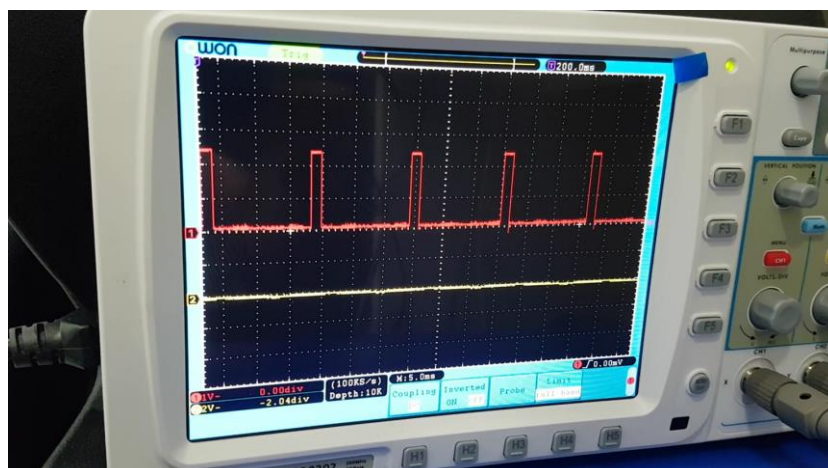
void rtiNotification(rtiBASE_t *rtiREG, uint32 notification)
{
    pwmSetDuty(hetRAM1, pwm1, 10);
}

```

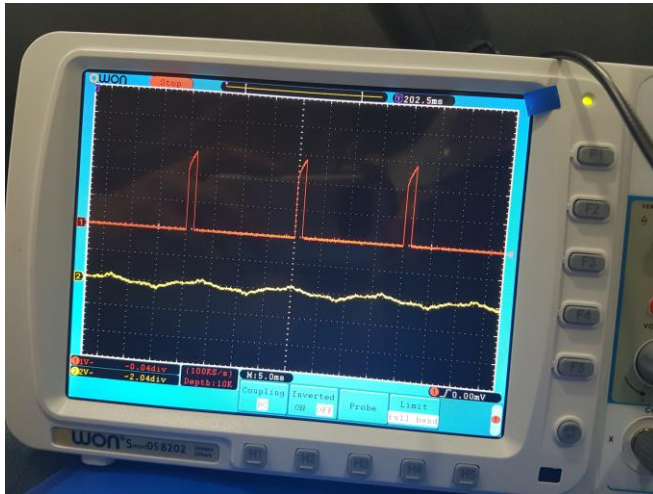
duty : 5%



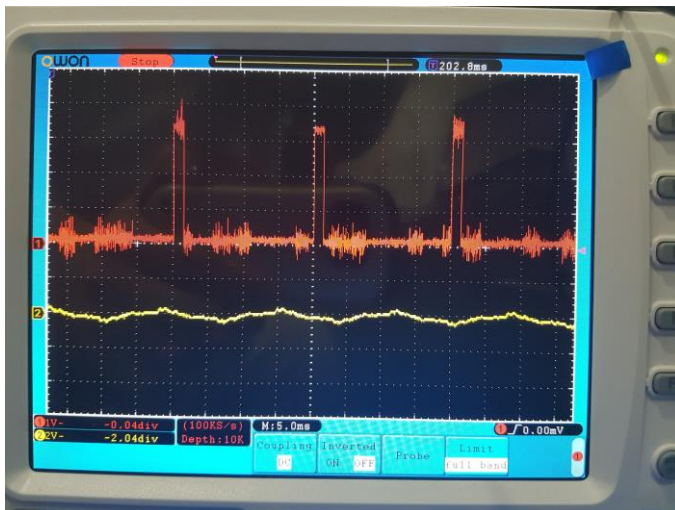
duty : 10%



MCU로 신호선, GND 연결 후 오실로스코프 측정 (전압 : 2.9v, 주기 : 20m/s, 펄스 up너비 : 2m/s)



MCU로 신호선, 아두이노GND 연결 후 오실로스코프 측정 (전압 : 3.4v, 주기 : 20m/s, 펄스 up너비 : 2m/s)



아두이노로 신호선, GND 연결 후 오실로스코프 측정 (전압 : 3.8v, 주기 : 20m/s, 펄스 up너비 : 2m/s)

