```
;*******************************
;*     Counter and sender by UART   *
;*                 20 MHz Xtal          *
;*                 ATTiny 2313          *
;*                 by Laabicz     .     *
;*                 rev. 06.06.2012      *
;*******************************
;
;pinb 7 input start counting
;pinb 6 input stop counting
;pinb 5 overflow pin control
;
;pind 1 uart tx
;
;pina 1 xtal
;pina 0 xtal
;
;UART parameters
;8 bit data
;1 bit stop
;no parity
;Rx off
;Tx on
;async.
;9600 baudrate
;
;
.nolist
.include        "tn2313def.inc"
.list

;*****************************
;*       Variables                   *
;*****************************
.def    temp            = r16
.def    tmr1_start      = r17
.def    tmr1_stop       = r18
.def    tmr1_h          = r19
.def    tmr1_l          = r20

;*****************************
;*   Interrupts vectors            *
;*****************************
.cseg
.org    0x0000
                rjmp init
.org    0x0005
                rjmp tmr1_ovf                   ;isr tmr1 overflow
.org    0x0013
```

```
;****************************
;*      Init setting:       *
;****************************
init:       ldi temp,low(ramend)        ;setting stackpointer
            out SPL,temp
            ldi tmr1_start, 0b00000001
            ldi tmr1_stop, 0b00000000
            ldi temp, 0b00111111 ;pinb 7,6  input
            out ddrb, temp              ;others pins output
            ldi temp, 0b11011111
            out portb, temp             ; pull up enable

;****************************
;*      UART setting:       *
;****************************
            ldi temp, 0b00000000
            out UBRRH, temp
            ldi temp, 0b10000001
            out UBRRL, temp             ;baudrate 9600
            ldi temp, 0b00000000
            out UCSRA,temp              ;
            ldi temp, 0b00001000
            out UCSRB,temp              ;Tx on
            ldi temp, 0b00001110
            out UCSRC,temp              ;8 data bits, no parity, async.

;****************************
;*     Main function        *
;****************************
main:       sei                         ;global interrupt allowed
            ldi temp, 0b1000000
            out TIMSK, temp             ;tmr1 ovf interrupt allowed
            ldi temp, 0b00000000
            out TCNT1H, temp            ;clearing tmr1 high register
            out TCNT1l, temp            ;clearing tmr1 low register
            ldi temp, 0b11011111
            out portb, temp             ; pull up enable

;****************************
;*   Measuring function     *
;****************************
m_start:    sbic PINB, 7                ;checking start signal on pinb7
            rjmp m_start                ;no signal, continue checking
            out TCCR1B, tmr1_start      ;recieced signal, start measuring
m_stop:     sbic PINB, 6                ;checking for stop signal on pinb6
            rjmp m_stop                 ;no signal, continue checking
            out TCCR1B, tmr1_stop       ;recieved signal, stop measuring
            in tmr1_l, TCNT1L
            in tmr1_h, TCNT1H
            nop
            nop
            nop
```

```
;****************************
;*   Send data by UART      *
;****************************
tx_start:       nop
                out UDR, tmr1_l
tx_2:           nop
                sbis UCSRA, 5
                rjmp tx_2                   ;wait until byte send
                out UDR, tmr1_h
tx_3:           nop
                sbis UCSRA, 5
                rjmp tx_3                   ;wait until byte send
                rjmp main

;****************************
;*   ISR - TMR1 Overflow    *
;****************************

tmr1_ovf:       nop
                out TCCR1B, tmr1_stop
                ldi temp, 0b01010101
                out TCNT1L, temp
                out TCNT1H, temp
                sbi pinb, 5
                reti
```