```
#include "datatypes.h"
#include <p18f442.h>

// Taktfrequenz
#define F_TAKT                          40000000

// Gewünschte Pulsfrequenzen
#define FREQUENCY1                      33000
#define FREQUENCY2                      36000
#define FREQUENCY3                      38000
#define FREQUENCY4                      40000

// Gewünschte Burstdauer in Impulsen
#define PULSESPERBURST                  30

UINT32 ui32CurrentPulseFrequency=0;
UINT32 ui32NewPulseFrequency=0;

void InterruptHandlerHigh (void);

#pragma code InterruptVectorHigh = 0x08
void InterruptVectorHigh (void)
{
  _asm
    goto InterruptHandlerHigh //jump to interrupt routine
  _endasm
}


#pragma code
#pragma interrupt InterruptHandlerHigh

void InterruptHandlerHigh ()
{
  if (PIR1bits.CCP1IF)
    {
        PIR1bits.CCP1IF=0;
        TMR1H=0;
        TMR1L=0;
    }
}

UINT8 ui8LeseJumperEin(void)
{
    UINT8 _ui8ReturnValue;
     ui8ReturnValue = PORTD & 0b11000000;
    _ui8ReturnValue >>= 6;
    return _ui8ReturnValue;
}

void InitBursts(UINT32 _ui32PulseFrequency, UINT8 _ui8PulsesPerBurst, UINT32 _ui32TaktFrequenz)
{
    UINT16 _ui16CCPR1Value;
    UINT8 _ui8PR2Value;
    UINT32  ui32Temp;

    TRISC           = 0b11111001;           // CCP1-Pin und CCP2-Pin als Ausgänge

    CCP1CON         = 0b00000010;           // CCP1 im Compare-Modus, Pin-Toggle
    T1CON           = 0b00000001;           // 8-bit-Zugriff, 1:1 Prescaler, Osc Shut-Off, Int.
Clock, Timer on
    T3CON=0;
    PIE1bits.CCP1IE = 1;
    IPR1bits.CCP1IP = 1;
    _ui32Temp       = _ui32TaktFrequenz*_ui8PulsesPerBurst;
     ui32Temp       /= (4* ui32PulseFrequency);
    _ui32Temp       -= 1;
    _ui16CCPR1Value = (UINT16) _ui32Temp;
    CCPR1H          = (UINT8) ( ui16CCPR1Value >> 8);
    CCPR1L          = (UINT8) (_ui16CCPR1Value & 0b0000000011111111);

    CCP2CON         = 0b00111111;           // CCP2 im PWM-Modus
    T2CON           = 0b00000101;           // 1:4 Prescaler, 1:1 Postscaler, Timer on
    _ui32Temp       = _ui32TaktFrequenz;
     ui32Temp       /= (16* ui32PulseFrequency);
    _ui32Temp       -= 1;
    _ui8PR2Value    = (UINT8) _ui32Temp;
    PR2             = (UINT8)  ui32Temp;
    _ui8PR2Value    >>=1;
    CCPR2L =_ui8PR2Value;
```

Die vier Frequenzen in Hz. Von 10KHz bis 250KHz

$t_B = t_P$, die Konstante gibt an, wieviele Impulse in t_B sind.