```c
#include ".\cidla.h"

#use rs232(baud=9600,parity=N,xmit=PIN_B3,bits=8,restart_wdt)

#define IRRX        PIN_B0

#define   TRESHOLD_MAX    70      // rozhodovaci uroven  pro cidla cerna/bila
#define   TRESHOLD_MIN    50
#define   CIHLA           10      // doba, po kterou musi byt detekovana cihla

unsigned int8 last_radius;     // rozsah
unsigned int8 last_cidla;      // co cidla videla minule
unsigned int8 shure;            // citac doby, po kterou musi byt detekovana cihla
/////////////////////////////////////////////////////////////////////////////
void main()
{
   int8 cidla;
   unsigned int8 a;
   unsigned int8 n;

   setup_adc_ports(sAN0|sAN1|sAN2|sAN3|sAN4|sAN5|sAN6|VSS_VDD);
   setup_adc(ADC_CLOCK_INTERNAL);
   setup_timer_0(RTCC_INTERNAL|RTCC_DIV_1);
   setup_timer_1(T1_DISABLED);
   setup_timer_2(T2_DISABLED,0,1);
   setup_comparator(NC_NC_NC_NC);
   setup_vref(FALSE);

   Delay_ms(500);
   setup_spi(SPI_SLAVE|SPI_H_TO_L|SPI_SS_DISABLED);

   // diagnostika
   printf("\n\r");
   Delay_ms(100);
   printf("***\n\r");
   Delay_ms(100);
   for (n=0; n<=6; n++)
   {
      set_adc_channel(n);
      Delay_ms(100);     // odvysila stavy vsech cidel
      a=read_adc();
      printf("sensor %u - %u\n\r",n,a);
   }

   shure=0;
   while(true)
   {
      set_adc_channel(0);
      cidla=0;
      Delay_us(10);
      a=read_adc();

      set_adc_channel(1);
      if(a<TRESHOLD_MAX)          //hystereze cidel
      {
         if(a>TRESHOLD_MIN)
         {
            cidla |= (last_cidla & 0b00000001);
         }
         else cidla |= 0b00000001;
      }

      a=read_adc();
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        set_adc_channel(2);
        if(a<TRESHOLD_MAX)
        {
            if(a>TRESHOLD_MIN)
            {
                cidla |= (last_cidla & 0b00000010);
            }
            else cidla |= 0b00000010;
        }

        a=read_adc();

        set_adc_channel(3);
        if(a<TRESHOLD_MAX)
        {
            if(a>TRESHOLD_MIN)
            {
                cidla |= (last_cidla & 0b00000100);
            }
            else cidla |= 0b00000100;
        }

        a=read_adc();

        set_adc_channel(4);
        if(a<TRESHOLD_MAX)
        {
            if(a>TRESHOLD_MIN)
            {
                cidla |= (last_cidla & 0b00001000);
            }
            else cidla |= 0b00001000;
        }
        a=read_adc();

        set_adc_channel(5);

        if(a<TRESHOLD_MAX)
        {
            if(a>TRESHOLD_MIN)
            {
                cidla |= (last_cidla & 0b00010000);
            }
            else cidla |= 0b00010000;
        }
        a=read_adc();

        set_adc_channel(6);
        if(a<TRESHOLD_MAX)
        {
            if(a>TRESHOLD_MIN)
            {
                cidla |= (last_cidla & 0b00100000);
            }
            else cidla |= 0b00100000;
        }
        a=read_adc();

        if(a<TRESHOLD_MAX)
        {
            if(a>TRESHOLD_MIN)
            {
                cidla |=(last_cidla & 0b01000000);
            }
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            else cidla |= 0b01000000;
        }

        last_cidla=cidla;

        // cteni cidla na cihlu
        if (!input(IRRX)) {if (shure<255) shure++;} else {shure=0;};
        if (shure>CIHLA) cidla|=0b10000000; //kontroluje se jestli jde o staly signal

        cidla=~cidla;
        spi_write(cidla); // namerene hodnoty se pripravi na odeslani
    }
}
```