

```
#include <avr\io.h>
char putch_USART_MSPI(char cx);
void initMegaMSPI(unsigned baud);
void initMC14489 (char conf);
char dispDat[3] = {0xB9, 0x97, 0x04};

void main(void)
{
    unsigned char i;
    initMegaMSPI(0x03);
    initMC14489(0x01);
    PORTD &= 0xFE; // enable SPI transfer to MC14489
    for(i = 0; i <3; i++){
        putch_USART_MSPI(dispDat[i]);
    }
    PORTD |= 0x01; // update display data
    while(1);
}
// -----
// This function enables the CPI module to master mode and set baud rate to 4 MHz.
// -----
void initMegaMSPI(unsigned baud)
{
    UBRR1 = 0; // enable SPI to master mode, set baud rate to 4 MHz
    DDRD  &= 0xD4; // configure PD5, PD3, PD0 for output, PD1 for input
    DDRD  |= 0x29; //
    UCSR1B = (1<<RXEN1) | (TXEN1);
    UCSR1C = (1<<UMSEL11) | (1<<UMSEL10) | (0<<UCSZ10) | (0<<UCPOL1) ;
    UBRR1 = baud; // set up baud rate
}
// -----
// This function configures the MC14489's C5~C1 to hex decode normal in normal
// brightness.
// -----
void initMC14489 (char conf)
{
    PORTD &= 0xFE; // enable SPI transfer to MC14489
    putch_USART_MSPI(conf);
    PORTD |= 0x01; // execute the configuration
}
// -----
// This function outputs a character to USART1 in MSPI mode.
// -----
char putch_USART_MSPI(char cx)
{
    while(!(UCSR1A & (1<<UDRE1)));
    UDR1 = cx;
    while(!(UCSR1A & (1<<RXC1)));
    return UDR1;
}
```