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// Программа синусоиды для P89LPC938, P89LPC904
// кварц 22118400 Гц или внутр. ген. 7372800 Гц.
//-----
#include "stdarg.h"
#include "stdio.h" /* для printf */
#include "stdlib.h"
#include "reg935.h" /* для RS232 */

//-----
    unsigned char j,k,l,m;
//    unsigned short l;
//    unsigned long n,nl;
//-----
// SIN_TAB посчитана по формуле:  $Y=255*(0.5+05*\sin(p*i/255-p/2))$ ,
// где  $p=3.1415926526$ 
unsigned char code SIN_TAB[256] = {
    0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x01, //08
    0x01, 0x01, 0x01, 0x01, 0x02, 0x02, 0x02, 0x02, //16
    0x03, 0x03, 0x03, 0x04, 0x04, 0x05, 0x05, 0x06, //24
    0x06, 0x06, 0x07, 0x08, 0x08, 0x09, 0x09, 0x0a, //32
    0x0a, 0x0b, 0x0c, 0x0c, 0x0d, 0x0e, 0x0e, 0x0f, //40
    0x10, 0x11, 0x11, 0x12, 0x13, 0x14, 0x15, 0x16, //48
    0x17, 0x17, 0x18, 0x19, 0x1a, 0x1b, 0x1c, 0x1d, //56
    0x1e, 0x1f, 0x20, 0x21, 0x22, 0x23, 0x25, 0x26, //64
    0x27, 0x28, 0x29, 0x2a, 0x2b, 0x2d, 0x2e, 0x2f, //72
    0x30, 0x31, 0x33, 0x34, 0x35, 0x36, 0x38, 0x39, //80
    0x3a, 0x3c, 0x3d, 0x3e, 0x40, 0x41, 0x42, 0x44, //88
    0x45, 0x47, 0x48, 0x49, 0x4b, 0x4c, 0x4e, 0x4f, //96
    0x51, 0x52, 0x54, 0x55, 0x57, 0x58, 0x5a, 0x5b, //104
    0x5d, 0x5e, 0x60, 0x61, 0x63, 0x64, 0x66, 0x67, //112
    0x69, 0x6a, 0x6c, 0x6d, 0x6f, 0x71, 0x72, 0x74, //120
    0x75, 0x77, 0x78, 0x7a, 0x7c, 0x7d, 0x7f, 0x80, //128
    0x82, 0x83, 0x85, 0x87, 0x88, 0x8a, 0x8b, 0x8d, //136
    0x8e, 0x90, 0x92, 0x93, 0x95, 0x96, 0x98, 0x99, //144
    0x9b, 0x9c, 0x9e, 0x9f, 0xa1, 0xa2, 0xa4, 0xa5, //152
    0xa7, 0xa8, 0xaa, 0xab, 0xad, 0xae, 0xb0, 0xb1, //160
    0xb3, 0xb4, 0xb6, 0xb7, 0xb8, 0xba, 0xbb, 0xbd, //168
    0xbe, 0xbf, 0xc1, 0xc2, 0xc3, 0xc5, 0xc6, 0xc7, //176
    0xc9, 0xca, 0xcb, 0xcc, 0xce, 0xcf, 0xd0, 0xd1, //184
    0xd2, 0xd4, 0xd5, 0xd6, 0xd7, 0xd8, 0xd9, 0xda, //192
    0xdc, 0xdd, 0xde, 0xdf, 0xe0, 0xe1, 0xe2, 0xe3, //200
    0xe4, 0xe5, 0xe6, 0xe7, 0xe8, 0xe8, 0xe9, 0xea, //208
    0xeb, 0xec, 0xed, 0xee, 0xee, 0xef, 0xf0, 0xf1, //216
    0xf1, 0xf2, 0xf3, 0xf3, 0xf4, 0xf5, 0xf5, 0xf6, //224
    0xf6, 0xf7, 0xf7, 0xf8, 0xf9, 0xf9, 0xf9, 0xfa, //232
    0xfa, 0xfb, 0xfb, 0xfc, 0xfc, 0xfc, 0xfd, 0xfd, //240
    0xfd, 0xfd, 0xfe, 0xfe, 0xfe, 0xfe, 0xfe, 0xff, //248
    0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, 0xff, //256
};
//-----

void initdac(void) {

//---DAC0---
//    ADCON0=0x05;
//    ADMODA=0x01;
//    ADMODB=0x24;
//    ADINS=0x08;
//-----

//---DAC1---
    ADCON1=0x05;//5;
//    ADMODA=0x10;//10;
    ADMODB=0x08;

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    ADINS=0x80; //08;
//-----
}
//*****/
void main(void)
{
    initdac(); //При F=22.1184 МГц имеем:
    k=32;      //k=32->16 Точек на Период, k=16->32 Т/П, k=8->64 Т/П.
    l=256-k;  //16 Т/П->T=20us, F=50 кГц; 32Т/П->F=25кГц; 64Т/П->F=12.5кГц.
    m=k-1;    //Время одного ЦАП=20us/16=1.25us вместе с SIN_TAB[j].
ST:
    for (j=0; j!=l; j=j+k) {
        //AD0DAT3=SIN_TAB[j];
        AD1DAT3=SIN_TAB[j];
        //AD1DAT3=j;
    }
    for (j=255; j!=m; j=j-k){
        //AD0DAT3=SIN_TAB[j];
        AD1DAT3=SIN_TAB[j];
        //AD1DAT3=j;
    }
    goto ST;

E:
    goto E;
}

```