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u8g\_dev\_lc7981\_160x80.c

Universal 8bit Graphics Library

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\*/

#include "u8g.h"

#define WIDTH 160

#define HEIGHT 80

#define PAGE\_HEIGHT 8

/\*

code ideas:

https://github.com/vsergeev/embedded-drivers/tree/master/avr-lc7981

data sheets:

http://www.lcd-module.de/eng/pdf/zubehoer/lc7981.pdf

http://www.lcd-module.de/pdf/grafik/w160-6.pdf

\*/

static const uint8\_t u8g\_dev\_lc7981\_160x80\_init\_seq[] PROGMEM = {

U8G\_ESC\_CS(0), /\* disable chip \*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

U8G\_ESC\_RST(15), /\* do reset low pulse with (15\*16)+2 milliseconds (=maximum delay)\*/

U8G\_ESC\_CS(1), /\* enable chip \*/

U8G\_ESC\_DLY(50), /\* delay 50 ms \*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

0x000, /\* mode register \*/

U8G\_ESC\_ADR(0), /\* data mode \*/

0x032, /\* display on (bit 5), master mode on (bit 4), graphics mode on (bit 1)\*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

0x001, /\* character/bits per pixel pitch \*/

U8G\_ESC\_ADR(0), /\* data mode \*/

0x007, /\* 8 bits per pixel \*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

0x002, /\* number of chars/byte width of the screen \*/

U8G\_ESC\_ADR(0), /\* data mode \*/

WIDTH/8-1, /\* 8 bits per pixel \*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

0x003, /\* time division \*/

U8G\_ESC\_ADR(0), /\* data mode \*/

0x07f, /\* \*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

0x008, /\* display start low \*/

U8G\_ESC\_ADR(0), /\* data mode \*/

0x000, /\* \*/

U8G\_ESC\_ADR(1), /\* instruction mode \*/

0x009, /\* display start high \*/

U8G\_ESC\_ADR(0), /\* data mode \*/

0x000, /\* \*/

U8G\_ESC\_DLY(10), /\* delay 10 ms \*/

U8G\_ESC\_CS(0), /\* disable chip \*/

U8G\_ESC\_END /\* end of sequence \*/

};

uint8\_t u8g\_dev\_lc7981\_160x80\_fn(u8g\_t \*u8g, u8g\_dev\_t \*dev, uint8\_t msg, void \*arg)

{

switch(msg)

{

case U8G\_DEV\_MSG\_INIT:

u8g\_InitCom(u8g, dev, U8G\_SPI\_CLK\_CYCLE\_NONE);

u8g\_WriteEscSeqP(u8g, dev, u8g\_dev\_lc7981\_160x80\_init\_seq);

break;

case U8G\_DEV\_MSG\_STOP:

break;

case U8G\_DEV\_MSG\_PAGE\_NEXT:

{

uint8\_t y, i;

uint16\_t disp\_ram\_adr;

uint8\_t \*ptr;

u8g\_pb\_t \*pb = (u8g\_pb\_t \*)(dev->dev\_mem);

u8g\_SetAddress(u8g, dev, 1); /\* cmd mode \*/

u8g\_SetChipSelect(u8g, dev, 1);

y = pb->p.page\_y0;

ptr = pb->buf;

disp\_ram\_adr = WIDTH/8;

disp\_ram\_adr \*= y;

for( i = 0; i < 8; i ++ )

{

u8g\_SetAddress(u8g, dev, 1); /\* cmd mode \*/

u8g\_WriteByte(u8g, dev, 0x00a ); /\* display ram (cursor) address low byte \*/

u8g\_SetAddress(u8g, dev, 0); /\* data mode \*/

u8g\_WriteByte(u8g, dev, disp\_ram\_adr & 0x0ff );

u8g\_SetAddress(u8g, dev, 1); /\* cmd mode \*/

u8g\_WriteByte(u8g, dev, 0x00b ); /\* display ram (cursor) address hight byte \*/

u8g\_SetAddress(u8g, dev, 0); /\* data mode \*/

u8g\_WriteByte(u8g, dev, disp\_ram\_adr >> 8 );

u8g\_SetAddress(u8g, dev, 1); /\* cmd mode \*/

u8g\_WriteByte(u8g, dev, 0x00c ); /\* write data \*/

u8g\_SetAddress(u8g, dev, 0); /\* data mode \*/

u8g\_WriteSequence(u8g, dev, WIDTH/8, ptr);

ptr += WIDTH/8;

disp\_ram\_adr += WIDTH/8;

}

u8g\_SetChipSelect(u8g, dev, 0);

}

break;

}

return u8g\_dev\_pb8h1f\_base\_fn(u8g, dev, msg, arg);

}

U8G\_PB\_DEV(u8g\_dev\_lc7981\_160x80\_8bit, WIDTH, HEIGHT, PAGE\_HEIGHT, u8g\_dev\_lc7981\_160x80\_fn, U8G\_COM\_FAST\_PARALLEL);