/\*

u8g\_scale.c

Universal 8bit Graphics Library

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Scale screen by some constant factors. Usefull for making bigger fonts wiht less

memory consumption

\*/

#include "u8g.h"

uint8\_t u8g\_dev\_scale\_2x2\_fn(u8g\_t \*u8g, u8g\_dev\_t \*dev, uint8\_t msg, void \*arg);

u8g\_dev\_t u8g\_dev\_scale = { u8g\_dev\_scale\_2x2\_fn, NULL, NULL };

void u8g\_UndoScale(u8g\_t \*u8g)

{

if ( u8g->dev != &u8g\_dev\_scale )

return;

u8g->dev = u8g\_dev\_scale.dev\_mem;

u8g\_UpdateDimension(u8g);

}

void u8g\_SetScale2x2(u8g\_t \*u8g)

{

if ( u8g->dev != &u8g\_dev\_scale )

{

u8g\_dev\_scale.dev\_mem = u8g->dev;

u8g->dev = &u8g\_dev\_scale;

}

u8g\_dev\_scale.dev\_fn = u8g\_dev\_scale\_2x2\_fn;

u8g\_UpdateDimension(u8g);

}

uint8\_t u8g\_dev\_scale\_2x2\_fn(u8g\_t \*u8g, u8g\_dev\_t \*dev, uint8\_t msg, void \*arg)

{

u8g\_dev\_t \*chain = (u8g\_dev\_t \*)(dev->dev\_mem);

uint8\_t pixel;

uint16\_t scaled\_pixel;

uint8\_t i;

uint8\_t dir;

u8g\_uint\_t x, y, xx,yy;

switch(msg)

{

default:

return u8g\_call\_dev\_fn(u8g, chain, msg, arg);

case U8G\_DEV\_MSG\_GET\_WIDTH:

\*((u8g\_uint\_t \*)arg) = u8g\_GetWidthLL(u8g, chain) / 2;

break;

case U8G\_DEV\_MSG\_GET\_HEIGHT:

\*((u8g\_uint\_t \*)arg) = u8g\_GetHeightLL(u8g, chain) / 2;

break;

case U8G\_DEV\_MSG\_GET\_PAGE\_BOX:

/\* get page size from next device in the chain \*/

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

((u8g\_box\_t \*)arg)->x0 /= 2;

((u8g\_box\_t \*)arg)->x1 /= 2;

((u8g\_box\_t \*)arg)->y0 /= 2;

((u8g\_box\_t \*)arg)->y1 /= 2;

return 1;

case U8G\_DEV\_MSG\_SET\_PIXEL:

x = ((u8g\_dev\_arg\_pixel\_t \*)arg)->x;

x \*= 2;

y = ((u8g\_dev\_arg\_pixel\_t \*)arg)->y;

y \*= 2;

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = x;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = y;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

x++;

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = x;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = y;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

y++;

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = x;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = y;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

x--;

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = x;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = y;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

break;

case U8G\_DEV\_MSG\_SET\_8PIXEL:

pixel = ((u8g\_dev\_arg\_pixel\_t \*)arg)->pixel;

dir = ((u8g\_dev\_arg\_pixel\_t \*)arg)->dir;

scaled\_pixel = 0;

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

{

scaled\_pixel<<=2;

if ( pixel & 128 )

{

scaled\_pixel |= 3;

}

pixel<<=1;

}

x = ((u8g\_dev\_arg\_pixel\_t \*)arg)->x;

x \*= 2;

xx = x;

y = ((u8g\_dev\_arg\_pixel\_t \*)arg)->y;

y \*= 2;

yy = y;

if ( ((u8g\_dev\_arg\_pixel\_t \*)arg)->dir & 1 )

{

xx++;

}

else

{

yy++;

}

((u8g\_dev\_arg\_pixel\_t \*)arg)->pixel = scaled\_pixel>>8;

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = x;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = y;

((u8g\_dev\_arg\_pixel\_t \*)arg)->dir = dir;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = xx;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = yy;

((u8g\_dev\_arg\_pixel\_t \*)arg)->dir = dir;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

((u8g\_dev\_arg\_pixel\_t \*)arg)->pixel = scaled\_pixel&255;

//((u8g\_dev\_arg\_pixel\_t \*)arg)->pixel = 0x00;

switch(dir)

{

case 0:

x+=8;

xx+=8;

break;

case 1:

y+=8;

yy+=8;

break;

case 2:

x-=8;

xx-=8;

break;

case 3:

y-=8;

yy-=8;

break;

}

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = x;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = y;

((u8g\_dev\_arg\_pixel\_t \*)arg)->dir = dir;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

((u8g\_dev\_arg\_pixel\_t \*)arg)->x = xx;

((u8g\_dev\_arg\_pixel\_t \*)arg)->y = yy;

((u8g\_dev\_arg\_pixel\_t \*)arg)->dir = dir;

u8g\_call\_dev\_fn(u8g, chain, msg, arg);

break;

}

return 1;

}