讯为自带七寸屏

**1.扫描顺序如下：**

**屏幕接口：**

1. **内核lcd驱动目录：**driver/video/samsung

**3.内核配置：**Device Drivers --->

Graphics support --->

Support for frame buffer devices --->(不要去掉)

S5P Framebuffer support(测试时去掉)

Backlight & LCD device support --->(测试时去掉)

(Multimedia support --->它也会创建fb\*设备节点还有 video\*)

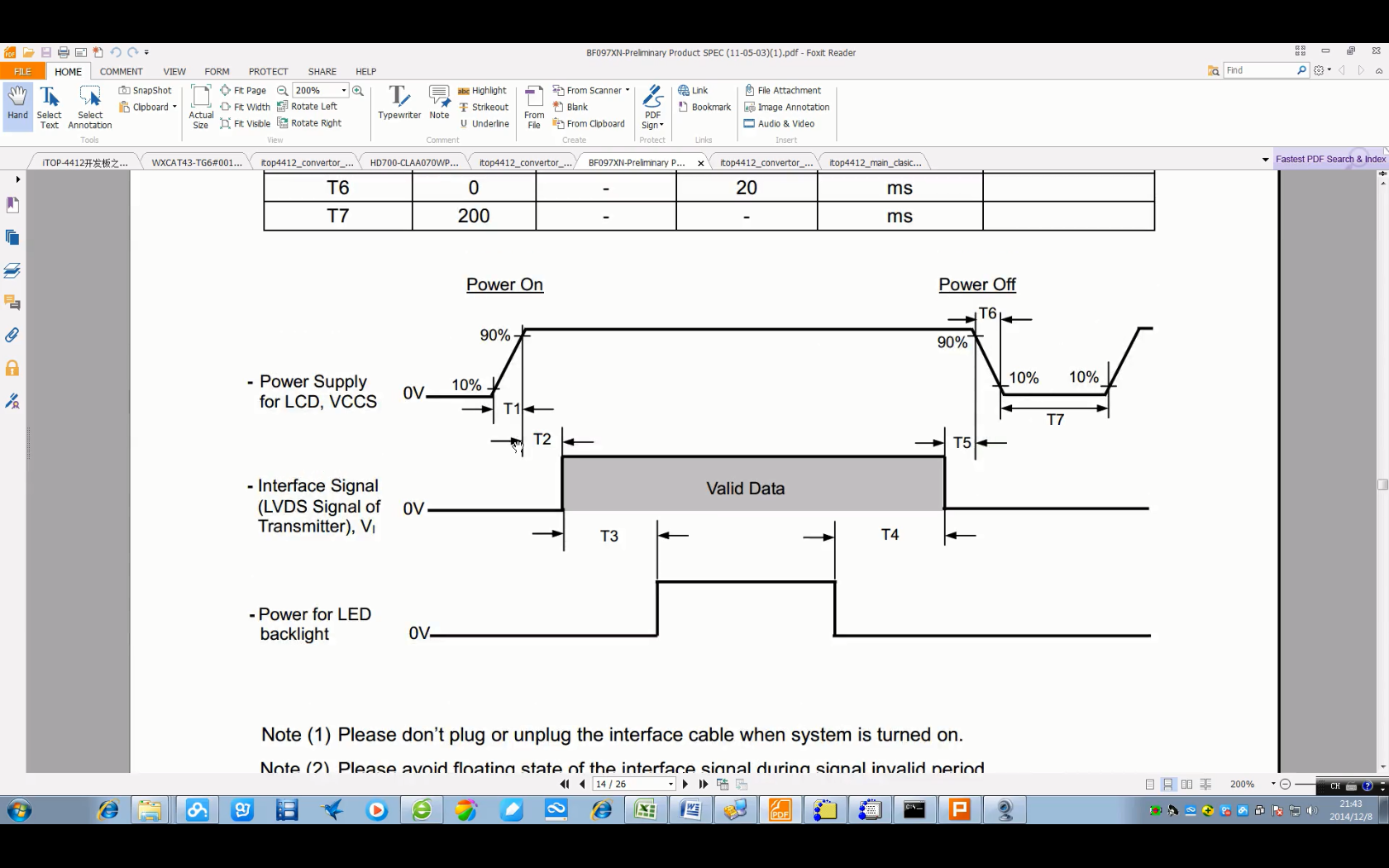
**4.本文件夹目录：**

lcd\_testapp.c文件是在程序里读出bmp文件内容然后修改写入fb0;

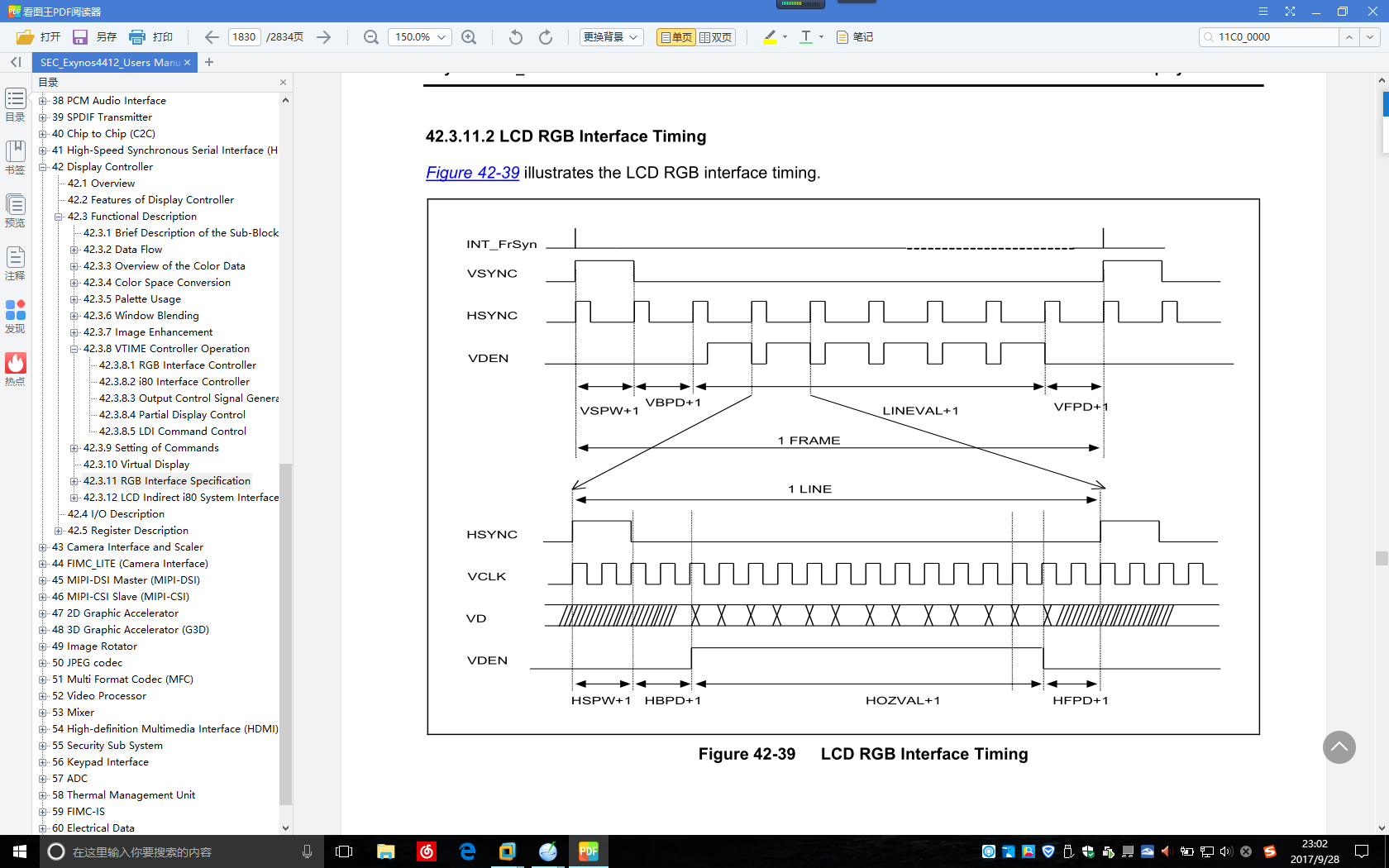
make\_image\_for\_4412.c文件是利用bmp图片制作出可以cat image > /dev/fb0的图片；

1. **lcd控制器时序图**

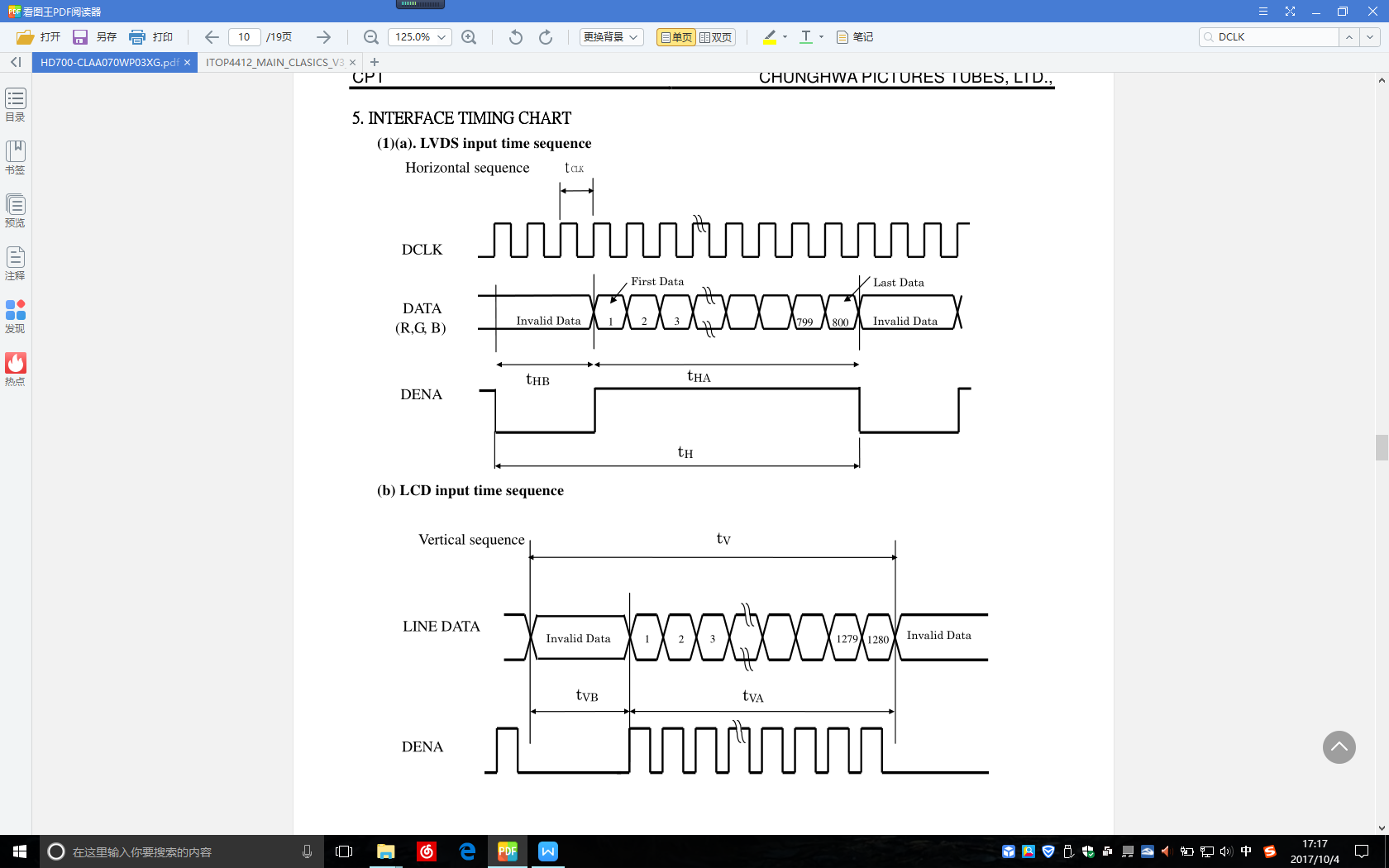
**上电时序：**

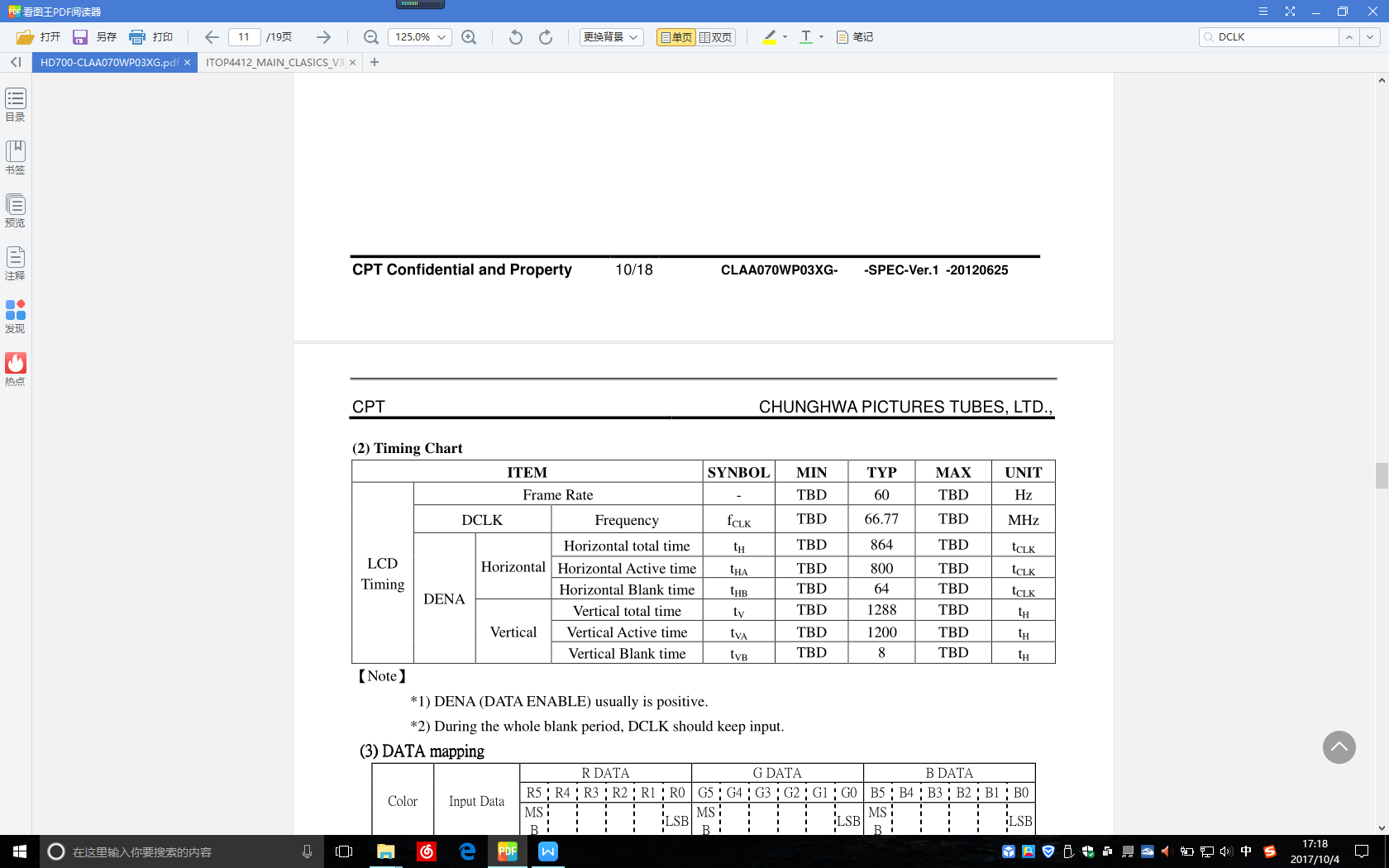


4412lcd控制器rgb输出时序：



**屏幕数据手册：**





可以得出：HSPW:45 HBPD:35 HFPD:0

VSPW:12 VBPD:8 VFPD:0

极性方面：上升沿发数据

**6.内核中板子屏幕属性：**

static struct s3cfb\_lcd wa101 = {

.bpp = 24,

.freq = 70

.timing = {

.h\_fp = 48,

.h\_bp = 80,

.h\_sw = 32,

.v\_fp = 3,

.v\_fpe = 0,

.v\_bp = 14,

.v\_bpe = 0,

.v\_sw = 5,

},

.polarity = {

.rise\_vclk = 1,

.inv\_hsync = 0,

.inv\_vsync = 1,

.inv\_vden = 0,

},

};

wa101.width = 800;

wa101.height = 1280;

wa101.bpp = 24;

wa101.freq = 50;

.hw\_ver = 0x70,

.nr\_wins = 5,

.swap = FB\_SWAP\_WORD | FB\_SWAP\_HWORD,

**7.讯为自带LCD驱动个人分析：**

1.lcd\_regulator = regulator\_get(NULL, "vdd33\_lcd"); //从regulator\_map\_list表中找到对应名称 (vdd33\_lcd)的regulator

2.regulator\_enable(lcd\_regulator); //使能该regulator

3.s3cfb\_set\_lcd\_info(fbdev[i]); //fbdev[i]->lcd = &wa101;获取LCD信息

4.pdata->cfg\_gpio(pdev); //初始化gpio

4.1初始化GPC0\_2并且输出低电平 //其他LCD屏幕接口的MD\_RSTN引角

msleep(250);

4.2初始化GPL0\_4并且输出高电平 //即使能CHG\_EN，产生VSYS\_LCD电源

msleep(100);

4.3初始化GPF0\_0至GPF3\_3共28个引脚为lcd模式

4.4初始化GPL1\_0并且输出高电平 //lvds的LCD\_PWDN输出高点平

5.pdata->clk\_on(pdev, &fbdev[i]->clock); //开启LCD模块,选择mpll时钟源,设置分 频，开启fimd时钟

6.res = platform\_get\_resource(pdev, IORESOURCE\_MEM, i); //获取设备资源，此设备资源里 有lcd控制器的物理地址等。

1. s3cfb\_init\_global(fbdev[i]); //设置lcd控制器寄存器

7.1 s3cfb\_set\_output(fbdev); //设置输出模式

寄存器 位 值 意义

VIDCON0 bit[28:26] 0 OUTPUT\_RGB

VIDCON2 bit[15] 0 WB\_DISABLE

bit[14] 0

Bit[13:12] 0

7.2 s3cfb\_set\_display\_mode(fbdev); //设置显示模式

寄存器 位 值 意义

VIDCON0 bit[19:17] 0 MODE\_RGB\_P

7.3 s3cfb\_set\_polarity(fbdev); //设置极性

寄存器 位 值 意义

VIDCON1 bit[10:9] 1 FIXVCLK\_VCLK\_RUN

Bit[7] 1 rise\_vclk

Bit[5] 1 inv\_vsync

7.4 s3cfb\_set\_timing(fbdev); //设置时序

寄存器 位 值 意义

VIDTCON0 bit[31:24] 0-1 VBPDE

bit[23:16] 14-1 VBPD

bit[15:8] 3-1 VFPD

bit[7:0] 5-1 VSPW

VIDTCON1 bit[31:24] 0-1 VFPDE

bit[23:16] 80-1 HBPD

bit[15:8] 48-1 HFPD

bit[7:0] 32-1 HSPW

7.5 s3cfb\_set\_lcd\_size(fbdev); //设置lcd的分辨率

寄存器 位 值 意义

VIDTCON2 bit[10:0] 800-1 width

Bit[21:11] 1280-1 height

1. s3cfb\_alloc\_framebuffer(fbdev[i], i) //分配一个fb\_info结构体

并且进行初始化

8.1 framebuffer\_alloc(sizeof(struct s3cfb\_window),fbdev->dev); //分配一个fb\_info结构体

8.2 s3cfb\_init\_fbinfo(fbdev, i); //对fb\_info进行初始化

strcpy(fix->id, “s3cfb”);

/\* fbinfo \*/

fb->fbops = &s3cfb\_ops;

fb->flags = FBINFO\_FLAG\_DEFAULT;

fb->pseudo\_palette = &win->pseudo\_pal

fix->xpanstep = 0;

fix->ypanstep = 0;

fix->type = FB\_TYPE\_PACKED\_PIXELS;

fix->accel = FB\_ACCEL\_NONE;

fix->visual = FB\_VISUAL\_TRUECOLOR;

var->xres = lcd->width;

var->yres = lcd->height;

var->xres\_virtual = var->xres;

var->yres\_virtual = var->yres \* CONFIG\_FB\_S5P\_NR\_BUFFERS;

var->bits\_per\_pixel = 32;

var->xoffset = 0;

var->yoffset = 0;

var->width = 0;

var->height = 0;

var->transp.length = 0;

fix->line\_length = var->xres\_virtual \* var->bits\_per\_pixel / 8;

fix->smem\_len = fix->line\_length \* var->yres\_virtual;

var->nonstd = 0;

var->activate = FB\_ACTIVATE\_NOW;

var->vmode = FB\_VMODE\_NONINTERLACED;

var->hsync\_len = timing->h\_sw;

var->vsync\_len = timing->v\_sw;

var->left\_margin = timing->h\_bp;

var->right\_margin = timing->h\_fp;

var->upper\_margin = timing->v\_bp;

var->lower\_margin = timing->v\_fp;

var->pixclock = (lcd->freq \*

(var->left\_margin + var->right\_margin

+ var->hsync\_len + var->xres) \*

(var->upper\_margin + var->lower\_margin

+ var->vsync\_len + var->yres));

var->pixclock = KHZ2PICOS(var->pixclock/1000);

var->red.offset = 16;

var->red.length = 8;

var->green.offset = 8;

var->green.length = 8;

var->blue.offset = 0;

var->blue.length = 8;

var->transp.offset = 24;

var->transp.length = 8; /\* added for LCD RGB32 \*/

8.3 s3cfb\_map\_default\_video\_memory(fbdev,fbdev->fb[i], fimd\_id); //分配显存

1. s3cfb\_register\_framebuffer(fbdev[i]) //注册一个framebuffer
2. s3cfb\_set\_clock(fbdev[i]); //

寄存器 位 值 意义

VIDCON0 bit[16] 0

bit[5] 0

bit[13:6] 15 CLKVAL\_F

1. s3cfb\_enable\_window(fbdev[0], pdata->default\_win);

s3cfb\_window\_on(fbdev, id);

寄存器 位 值 意义

SHADOWCON 0 1 Enables Channel 0

WINCON0 0 1 Enables the video output and video control signal

1. s3cfb\_display\_on(fbdev[i]);

寄存器 位 值 意义

VIDCON0 bit[1:0] 3 开启LCD控制器

1. register\_early\_suspend(&fbdev[i]->early\_suspend);
2. pdata->backlight\_on(pdev); //使能背光灯

mdelay(250);

GPD0\_1初始化并输出高电平

mdelay(5);

GPC0\_2初始化并输出高电平

1. pdata->lcd\_on(pdev); //空的