

Hello Guys,

I've currently designed a board with an STM32F756IGT6. Connected to the board is an 7" LCD from Rocktech. Same manufacturer as the 4.3" LCD's that can be found on the stm32F7 discovery boards.

I'm now trying to get the LCD to work. It's connected with a 18 bit RGB interface and i'm using the Sync connection mode. Not the DE connection. I have the display partially working because I can set background colors successful.

Now I was trying to put some pixels in the screen to verify the timing is correct. I adapted the STEMWIN hello world example from the discovery board to my board and tried to show the helllo world. But all I get is some random lines. I think the timing for the back porch etc is not correct.

In the datasheet of the LCD I find these parameters:

Input signal characteristics of SYNC mode.

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Clock Period	tclk	23.2	25.0	30.7	ns	
Clock Frequency	fclock	32.4	40	43	MHz	
Clock Low Level Width	twcl	8	-	-	ns	
Clock High Level Width	twch	8	-	-		
Clock Rise/Fall Time	tclr, tclfr	-	-	3		
HSYNC Period	tHP	862	1056	1100	tclk	
HSYNC Pulse Width	tHW	-	1	-	tclk	
HSYNC Back Porch	tBHP	-	45	-	tclk	
HSYNC Width + Back Porch	tW + tBHP	46			tclk	
Horizontal valid data width	tHV	800			tclk	
HSYNC Front Porch	tHFP	tHP - tHW - tBHP - tHV			tclk	
Horizontal Blank	tHAK	tHP - tHV			tclk	
VSYNC Period	tVP	628	635	650	tHP	
VSYNC Pulse Width	tVW	-	1	-	tHP	
VSYNC Back Porch	tVBP	22			tHP	
Vertical valid data width	tV	480			tHP	
Vertical Front Porch	tVFP	tVP - tVW - tVBP - tV			tHP	
Vertical Blank	tVAK	tVP - tV			tHP	
Data Setup Time	tDS	5	-	-	ns	
Data Hold Time	tDH	10	-	-	ns	

If i'm correct then these should be the settings for the LTDC controller:

```
void MX_LTDC_Init(void)
{
    LTDC_LayerCfgTypeDef pLayerCfg;
    LTDC_LayerCfgTypeDef pLayerCfg1;

    hltdc.Instance = LTDC;
    hltdc.Init.HSPolarity = LTDC_HSPOLARITY_AL;
    hltdc.Init.VSPolarity = LTDC_VSPOLARITY_AL;
    hltdc.Init.DEPolarity = LTDC_DEPOLARITY_AL;
    hltdc.Init.PCPolarity = LTDC_PCPOLARITY_IPC;
    hltdc.Init.HorizontalSync = 1;
    hltdc.Init.VerticalSync = 1;
    hltdc.Init.AccumulatedHBP = 45;
    hltdc.Init.AccumulatedVBP = 22;
    hltdc.Init.AccumulatedActiveW = 845;
    hltdc.Init.AccumulatedActiveH = 502;
}
```

```
hltdc.Init.TotalWidth = 1055;
hltdc.Init.TotalHeigh = 634;
hltdc.Init.Backcolor.Blue = 255;
hltdc.Init.Backcolor.Green = 0;
hltdc.Init.Backcolor.Red = 0;
HAL_LTDC_Init(&hltdc);

pLayerCfg.WindowX0 = 0;
pLayerCfg.WindowX1 = 0;
pLayerCfg.WindowY0 = 0;
pLayerCfg.WindowY1 = 0;
pLayerCfg.PixelFormat = LTDC_PIXEL_FORMAT_ARGB8888;
pLayerCfg.Alpha = 0;
pLayerCfg.Alpha0 = 0;
pLayerCfg.BlendingFactor1 = LTDC_BLENDING_FACTOR1_CA;
pLayerCfg.BlendingFactor2 = LTDC_BLENDING_FACTOR2_CA;
pLayerCfg.FBStartAdress = 0;
pLayerCfg.ImageWidth = 0;
pLayerCfg.ImageHeight = 0;
pLayerCfg.Backcolor.Blue = 0;
pLayerCfg.Backcolor.Green = 0;
pLayerCfg.Backcolor.Red = 0;
HAL_LTDC_ConfigLayer(&hltdc, &pLayerCfg, 0);

pLayerCfg1.WindowX0 = 0;
pLayerCfg1.WindowX1 = 0;
pLayerCfg1.WindowY0 = 0;
pLayerCfg1.WindowY1 = 0;
pLayerCfg1.PixelFormat = LTDC_PIXEL_FORMAT_ARGB8888;
pLayerCfg1.Alpha = 0;
pLayerCfg1.Alpha0 = 0;
pLayerCfg1.BlendingFactor1 = LTDC_BLENDING_FACTOR1_CA;
pLayerCfg1.BlendingFactor2 = LTDC_BLENDING_FACTOR2_CA;
pLayerCfg1.FBStartAdress = 0;
pLayerCfg1.ImageWidth = 0;
pLayerCfg1.ImageHeight = 0;
pLayerCfg1.Backcolor.Blue = 0;
pLayerCfg1.Backcolor.Green = 0;
pLayerCfg1.Backcolor.Red = 0;
HAL_LTDC_ConfigLayer(&hltdc, &pLayerCfg1, 1);
```

Could someone verify or check if these are the right settings? Or maybe someone has already used this kind of screen. Also is there a way to simply put some pixels on the screen? to verify everything is right?

Thank you verify much!