

a-Si TFT LCD Single Chip Driver with 240RGBx320 Resolution and 262K color

Application Notes

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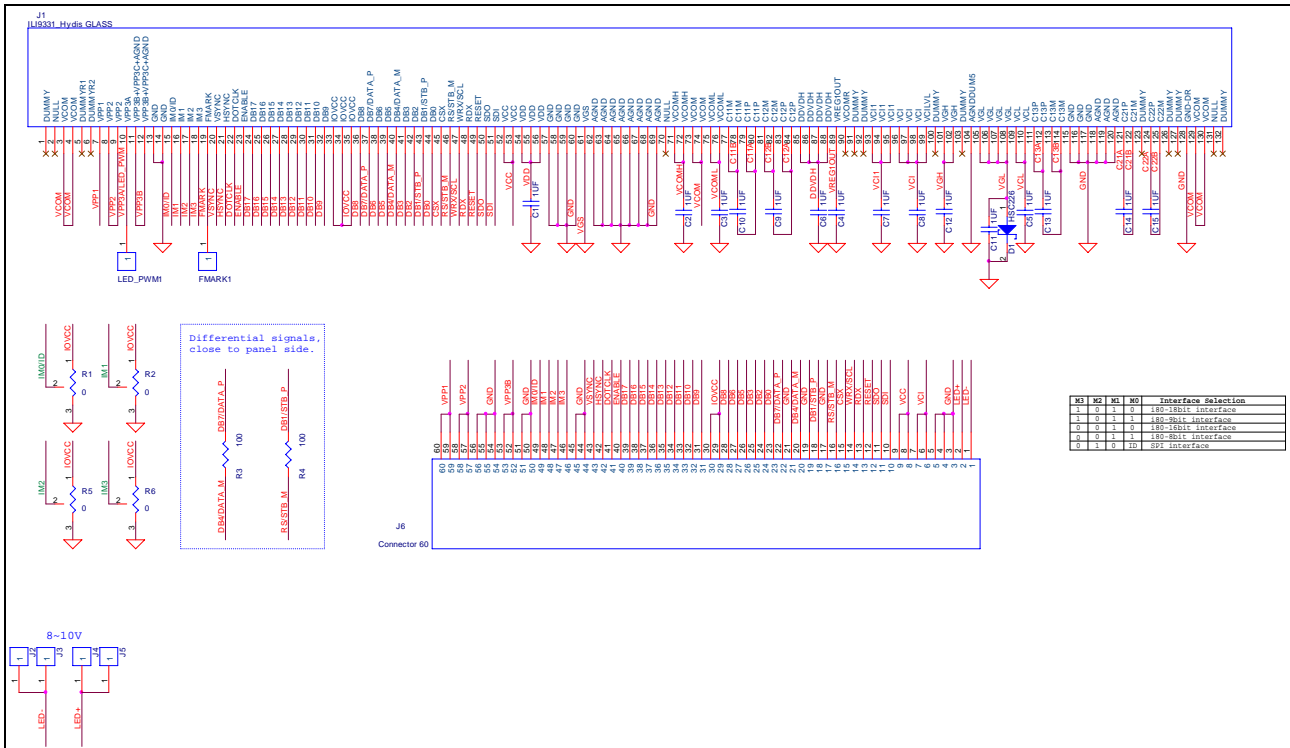
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1. HYDIS Panel

2.8" Panel_HTT28QV1-D01



HYDIS 2.8 “ Initial Code

void ILI9331_HYDIS2.8_Initial(void)

```
{
// VCI=2.8V
//***** Reset LCD Driver *****//
LCD_nRESET = 1;
    delays(1); // Delay 1ms
LCD_nRESET = 0;
    delays(10); // Delay 10ms          // This delay time is necessary
LCD_nRESET = 1;
    delays(50); // Delay 50 ms
//***** Start Initial Sequence *****//
LCD_CtrlWrite_ILI9331(0x00E7, 0x1014);
LCD_CtrlWrite_ILI9331 (0x0001, 0x0100);    // set SS and SM bit
LCD_CtrlWrite_ILI9331 (0x0002, 0x0200);    // set 1 line inversion
LCD_CtrlWrite_ILI9331 (0x0003, 0x1030);    // set GRAM write direction and BGR=1.
LCD_CtrlWrite_ILI9331 (0x0008, 0x0202);    // set the back porch and front porch
LCD_CtrlWrite_ILI9331 (0x0009, 0x0000);    // set non-display area refresh cycle ISC[3:0]
LCD_CtrlWrite_ILI9331 (0x000A, 0x0000);    // FMARK function
LCD_CtrlWrite_ILI9331 (0x000C, 0x0000);    // RGB interface setting
LCD_CtrlWrite_ILI9331 (0x000D, 0x0000);    // Frame marker Position
LCD_CtrlWrite_ILI9331 (0x000F, 0x0000);    // RGB interface polarity
//*****Power On sequence *****//
LCD_CtrlWrite_ILI9331 (0x0010, 0x0000);    // SAP, BT[3:0], AP, DSTB, SLP, STB
LCD_CtrlWrite_ILI9331 (0x0011, 0x0007);    // DC1[2:0], DC0[2:0], VC[2:0]
LCD_CtrlWrite_ILI9331 (0x0012, 0x0000);    // VREG1OUT voltage
LCD_CtrlWrite_ILI9331 (0x0013, 0x0000);    // VDV[4:0] for VCOM amplitude
    delays(200);                          // Dis-charge capacitor power voltage
LCD_CtrlWrite_ILI9331 (0x0010, 0x1690);    // SAP, BT[3:0], AP, DSTB, SLP, STB
LCD_CtrlWrite_ILI9331 (0x0011, 0x0227);    // DC1[2:0], DC0[2:0], VC[2:0]
    delays(50);                          // Delay 50ms
LCD_CtrlWrite_ILI9331 (0x0012, 0x000C);    // Internal reference voltage= Vci;
    delays(50);                          // Delay 50ms
LCD_CtrlWrite_ILI9331 (0x0013, 0x0800);    // Set VDV[4:0] for VCOM amplitude
LCD_CtrlWrite_ILI9331 (0x0029, 0x0011);    // Set VCM[5:0] for VCOMH
LCD_CtrlWrite_ILI9331 (0x002B, 0x000B);    // Set Frame Rate
    delays(50);                          // Delay 50ms
LCD_CtrlWrite_ILI9331 (0x0020, 0x0000);    // GRAM horizontal Address
LCD_CtrlWrite_ILI9331 (0x0021, 0x0000);    // GRAM Vertical Address
// ----- Adjust the Gamma Curve -----//
LCD_CtrlWrite_ILI9331 (0x0030, 0x0000);
LCD_CtrlWrite_ILI9331 (0x0031, 0x0106);
LCD_CtrlWrite_ILI9331 (0x0032, 0x0000);
LCD_CtrlWrite_ILI9331 (0x0035, 0x0204);
LCD_CtrlWrite_ILI9331 (0x0036, 0x160A);
LCD_CtrlWrite_ILI9331 (0x0037, 0x0707);
LCD_CtrlWrite_ILI9331 (0x0038, 0x0106);
LCD_CtrlWrite_ILI9331 (0x0039, 0x0707);
LCD_CtrlWrite_ILI9331 (0x003C, 0x0402);
LCD_CtrlWrite_ILI9331 (0x003D, 0x0C0F);
//----- Set GRAM area -----//
LCD_CtrlWrite_ILI9331 (0x0050, 0x0000);    // Horizontal GRAM Start Address
LCD_CtrlWrite_ILI9331 (0x0051, 0x00EF);    // Horizontal GRAM End Address
LCD_CtrlWrite_ILI9331 (0x0052, 0x0000);    // Vertical GRAM Start Address
LCD_CtrlWrite_ILI9331 (0x0053, 0x013F);    // Vertical GRAM Start Address
LCD_CtrlWrite_ILI9331 (0x0060, 0xA700);    // Gate Scan Line
LCD_CtrlWrite_ILI9331 (0x0061, 0x0001);    // NDL,VLE, REV
```

```

    LCD_CtrlWrite_ ILI9331 (0x006A, 0x0000);          // set scrolling line
//----- Partial Display Control -----//
    LCD_CtrlWrite_ ILI9331 (0x0080, 0x0000);
    LCD_CtrlWrite_ ILI9331 (0x0081, 0x0000);
    LCD_CtrlWrite_ ILI9331 (0x0082, 0x0000);
    LCD_CtrlWrite_ ILI9331 (0x0083, 0x0000);
    LCD_CtrlWrite_ ILI9331 (0x0084, 0x0000);
    LCD_CtrlWrite_ ILI9331 (0x0085, 0x0000);
//----- Panel Control -----//
    LCD_CtrlWrite_ ILI9331 (0x0090, 0x0010);
    LCD_CtrlWrite_ ILI9331 (0x0092, 0x0600);

    LCD_CtrlWrite_ ILI9331 (0x0007, 0x0133);          // 262K color and display ON
}

```

void LCD_ExitSleep_ILI9331(void)

```

{
//*****Power On sequence *****//
    LCD_CtrlWrite_ ILI9331 (0x0010, 0x0080);          // SAP, BT[3:0], AP, DSTB, SLP
    LCD_CtrlWrite_ ILI9331 (0x0011, 0x0000);          // DC1[2:0], DC0[2:0], VC[2:0]
    LCD_CtrlWrite_ ILI9331 (0x0012, 0x0000);          // VREG1OUT voltage
    LCD_CtrlWrite_ ILI9331 (0x0013, 0x0000);          // VDV[4:0] for VCOM amplitude
    delays(200);                                       // Dis-charge capacitor power voltage
    LCD_CtrlWrite_ ILI9331 (0x0010, 0x1690);          // SAP, BT[3:0], AP, DSTB, SLP, STB
    LCD_CtrlWrite_ ILI9331 (0x0011, 0x0227);          // DC1[2:0], DC0[2:0], VC[2:0]
    delays(50);                                       // Delay 50ms
    LCD_CtrlWrite_ ILI9331 (0x0012, 0x000C);          // Internal reference voltage =Vci;
    delays(50);                                       // Delay 50ms
    LCD_CtrlWrite_ ILI9331 (0x0013, 0x0800);          // VDV[4:0] for VCOM amplitude
    LCD_CtrlWrite_ ILI9331 (0x0029, 0x0011);          // VCM[5:0] for VCOMH
    delays(50);                                       // Delay 50ms
    LCD_CtrlWrite_ ILI9331 (0x0007, 0x0133);          // 262K color and display ON
}

```

void LCD_EnterSleep_ILI9331(void)

```

{
    LCD_CtrlWrite_ ILI9331 (0x0007, 0x0131);          // Set D1=0, D0=1
    delays(10);
    LCD_CtrlWrite_ ILI9331 (0x0007, 0x0130);          // Set D1=0, D0=0
    delays(10);
    LCD_CtrlWrite_ ILI9331 (0x0007, 0x0000);          // display OFF
//***** Power OFF sequence *****//
    LCD_CtrlWrite_ ILI9331 (0x0010, 0x0080);          // SAP, BT[3:0], APE, AP, DSTB, SLP
    LCD_CtrlWrite_ ILI9331 (0x0011, 0x0000);          // DC1[2:0], DC0[2:0], VC[2:0]
    LCD_CtrlWrite_ ILI9331 (0x0012, 0x0000);          // VREG1OUT voltage
    LCD_CtrlWrite_ ILI9331 (0x0013, 0x0000);          // VDV[4:0] for VCOM amplitude
    delays(200);                                       // Dis-charge capacitor power voltage
    LCD_CtrlWrite_ ILI9331(0x0010, 0x0082);          // SAP, BT[3:0], APE, AP, STB, SLP
}

```

Revision History

Revision History

Version No.	Date	Page	Description
V0.1	2008/08/27		New