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ILI9805

a-Si TFT LCD Single Chip Driver with 480RGBx864 Resolution and 16.7M-color

Application Notes

Version: Preliminary V0.7
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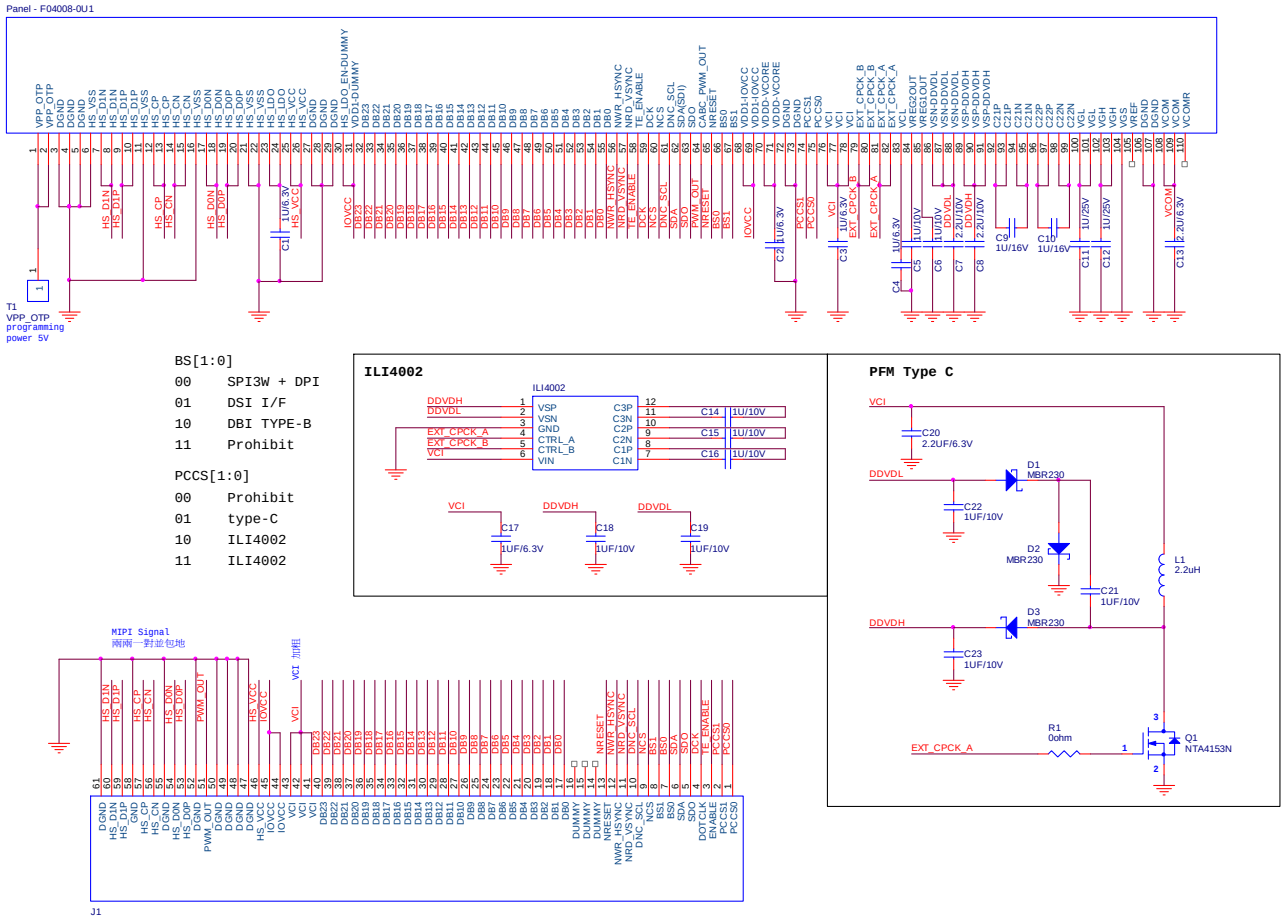
1. CMI 3.97 “ Panel

1.1 FPC Application Circuit



1.2 CMI3.97” Initial Code

```
Void ILI9805_CMI3.97-TN-2.8V_Initial_Code(void)
{// VCI=2.8V
//************ Reset LCD Driver ****************//
LCD_nRESET = 1;
Delayms(1); // Delay 1ms
LCD_nRESET = 0;
Delayms(1); // Delay 1ms // This delay time is necessary
LCD_nRESET = 1;
Delayms(10); // Delay 10 ms
//************ Start Initial Sequence **********//
LCD_ILI9805_CMD(0XFF);              //EXTC command Password
      LCD_ILI9805_INDEX(0xFF);
      LCD_ILI9805_INDEX(0x98);
      LCD_ILI9805_INDEX(0x05);
LCD_ILI9805_CMD(0XFD);              // for PFM setting (base on PFM device characteristics)
      LCD_ILI9805_INDEX(0x0F);
      LCD_ILI9805_INDEX(0x13);
      LCD_ILI9805_INDEX(0x44);
      LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XF8);              // for PFM setting (base on PFM device characteristics)
      LCD_ILI9805_INDEX(0x18);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x18);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x30);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x30);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x30);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XB8);              //EPF & DBI - 8/9/16/18/24 bits select
      LCD_ILI9805_INDEX(0x74);
LCD_ILI9805_CMD(0XF1);              //Gate Modulation
```

```
        LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XF2);          //CR/EQ/PC
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x58);
        LCD_ILI9805_INDEX(0x40);
LCD_ILI9805_CMD(0XF3);
        LCD_ILI9805_INDEX(0x60);
        LCD_ILI9805_INDEX(0x83);
        LCD_ILI9805_INDEX(0x04);
LCD_ILI9805_CMD(0XFC);
        LCD_ILI9805_INDEX(0x04);    //NOW
        LCD_ILI9805_INDEX(0x0F);
        LCD_ILI9805_INDEX(0x01);
LCD_ILI9805_CMD(0XEB);
        LCD_ILI9805_INDEX(0x08);
        LCD_ILI9805_INDEX(0x0F);
LCD_ILI9805_CMD(0XE0);          //P-Gamma
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x05);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0x12);
        LCD_ILI9805_INDEX(0x13);
        LCD_ILI9805_INDEX(0x1A);
        LCD_ILI9805_INDEX(0x0C);
        LCD_ILI9805_INDEX(0x0B);
        LCD_ILI9805_INDEX(0x01);
        LCD_ILI9805_INDEX(0x06);
        LCD_ILI9805_INDEX(0x03);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0X31);
        LCD_ILI9805_INDEX(0x2D);
        LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XE1);          //N-Gamma
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x05);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0x12);
        LCD_ILI9805_INDEX(0x12);
```

```
        LCD_ILI9805_INDEX(0x1A);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0x0B);
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x05);
        LCD_ILI9805_INDEX(0x03);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0x0D);
        LCD_ILI9805_INDEX(0x31);
        LCD_ILI9805_INDEX(0x2C);
        LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XC1);          //Power Control 1
        LCD_ILI9805_INDEX(0x15);    //VGH & VGL
        LCD_ILI9805_INDEX(0x30);    //EXT Pumping CLK & Vreg1out
        LCD_ILI9805_INDEX(0x10);    //Vreg2out
        LCD_ILI9805_INDEX(0x37);    //VCI1 & VCL
LCD_ILI9805_CMD(0xC7);
        LCD_ILI9805_INDEX(0xC3);  //VCOM
LCD_ILI9805_CMD(0xB1);          //Frame Rate Control
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x12);
        LCD_ILI9805_INDEX(0x14);
LCD_ILI9805_CMD(0xB4);          //2 Dot Inversion
        LCD_ILI9805_INDEX(0x02);
LCD_ILI9805_CMD(0xBB);
        LCD_ILI9805_INDEX(0x14);
        LCD_ILI9805_INDEX(0x55);
LCD_ILI9805_CMD(0x36);           //Memory Access
        LCD_ILI9805_INDEX(0x0A);
LCD_ILI9805_CMD(0x3A);
        LCD_ILI9805_INDEX(0x77);    //16 & 18 & 24 bits
//LCD_ILI9805_CMD(0X20);          //Display Inv-Off
LCD_ILI9805_CMD(0X21);          //Display Inv-On
LCD_ILI9805_CMD(0xB0);          //RGB I/F Polarity
        LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0xB6);          //CPU/RGB I/F Select
        LCD_ILI9805_INDEX(0x01);
LCD_ILI9805_CMD(0xC2);          //Power Control 2
        LCD_ILI9805_INDEX(0x11);
```

```
LCD_ILI9805_CMD(0xDF);              //For 4002 setting
      LCD_ILI9805_INDEX(0x23);
LCD_ILI9805_CMD(0x11);              //Sleep Out
      Delayms（120）;
LCD_ILI9805_CMD(0x29);              //Display On
      Delayms（20）;
LCD_ILI9805_CMD(0x2C);              //Memory Write
}
```

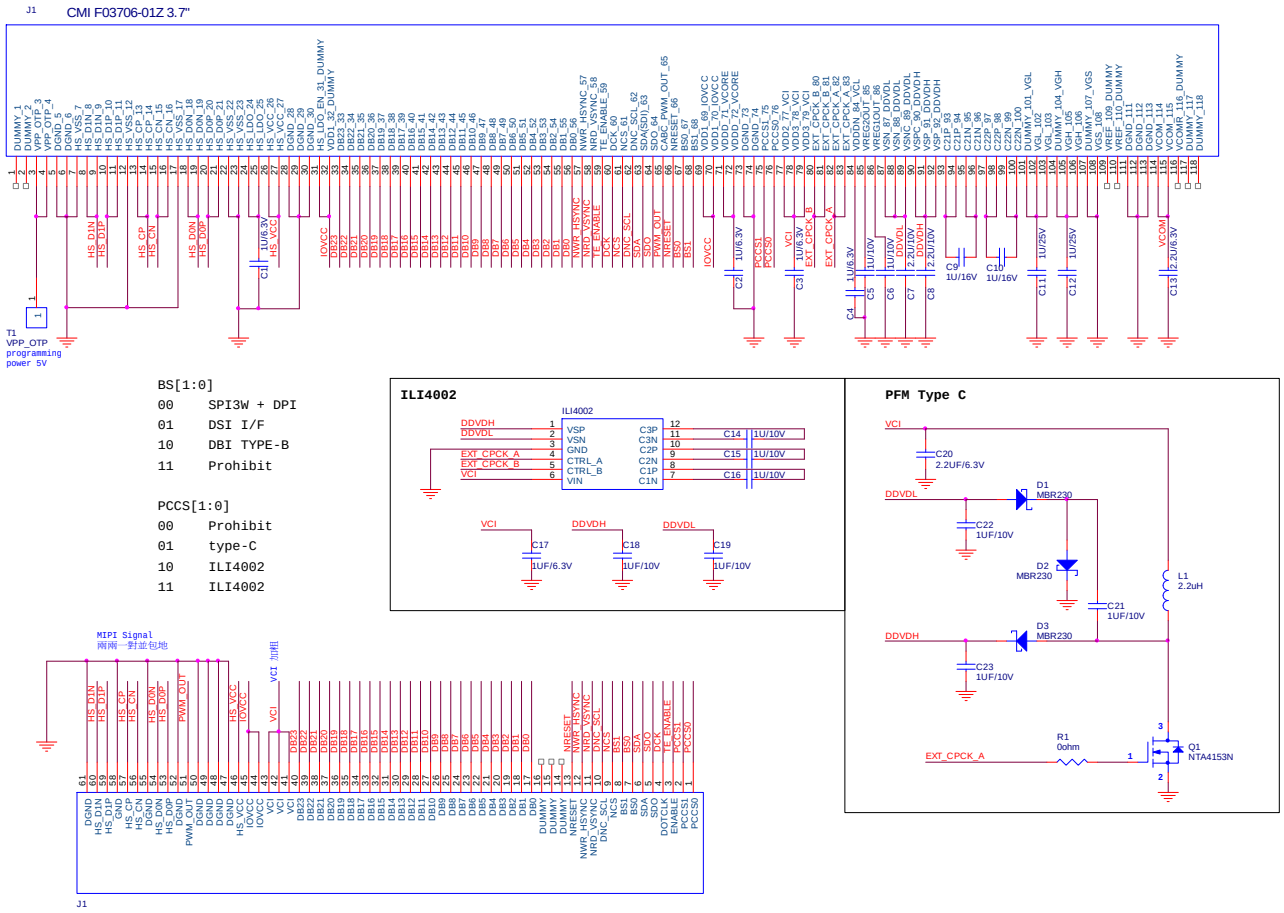
Void ILI9805_EnterSleep_Code(void)

```
{
LCD_ILI9805_CMD(0x10); // Internal oscillator will be stopped
Delayms(120);
}
```

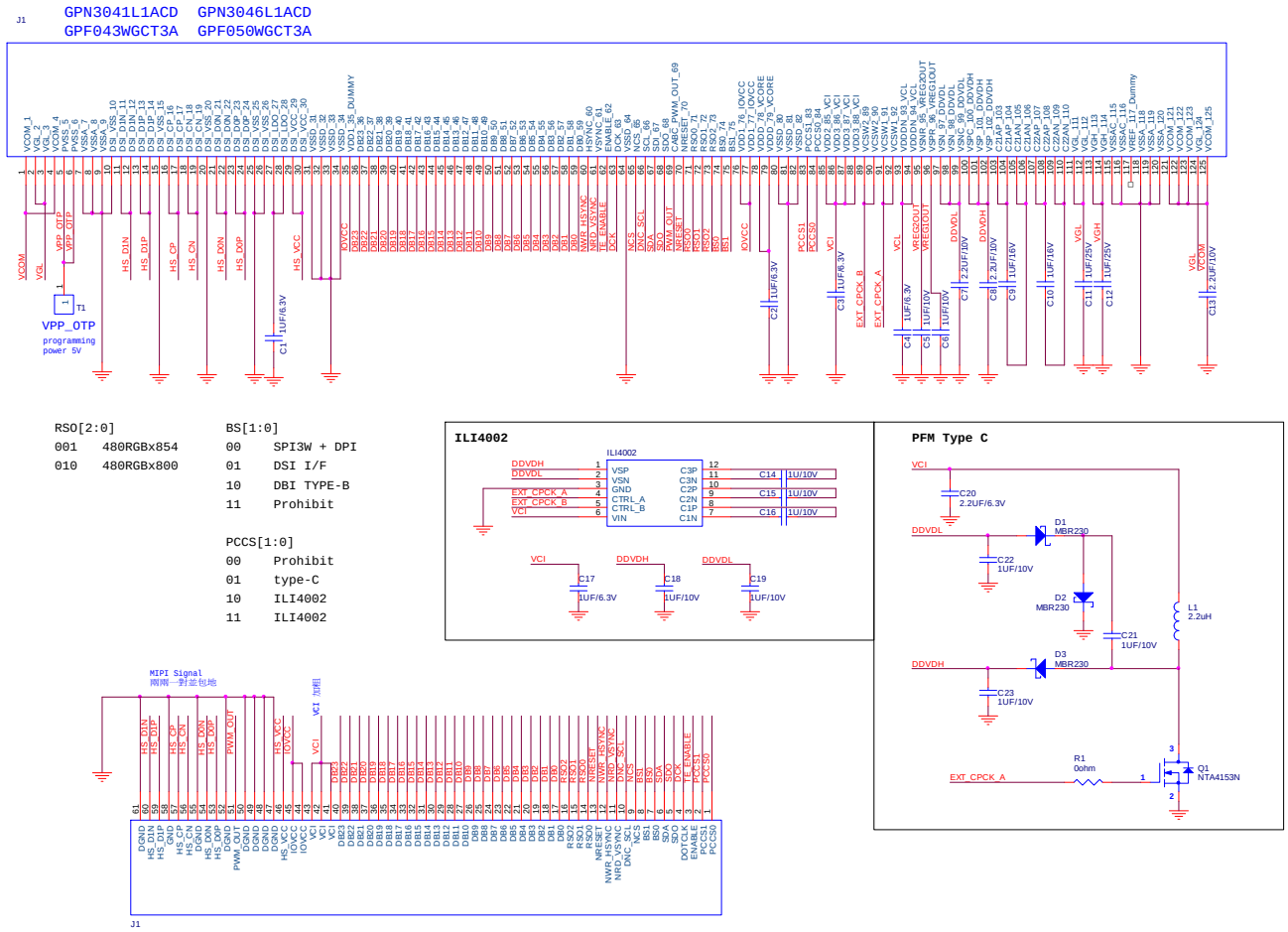
Void ILI9805_ExitSleep_Code(void)

```
{
LCD_ILI9805_CMD(0x11); // Sleep Out
Delayms(120);
}
```

2. CMI3.7 “ Panel

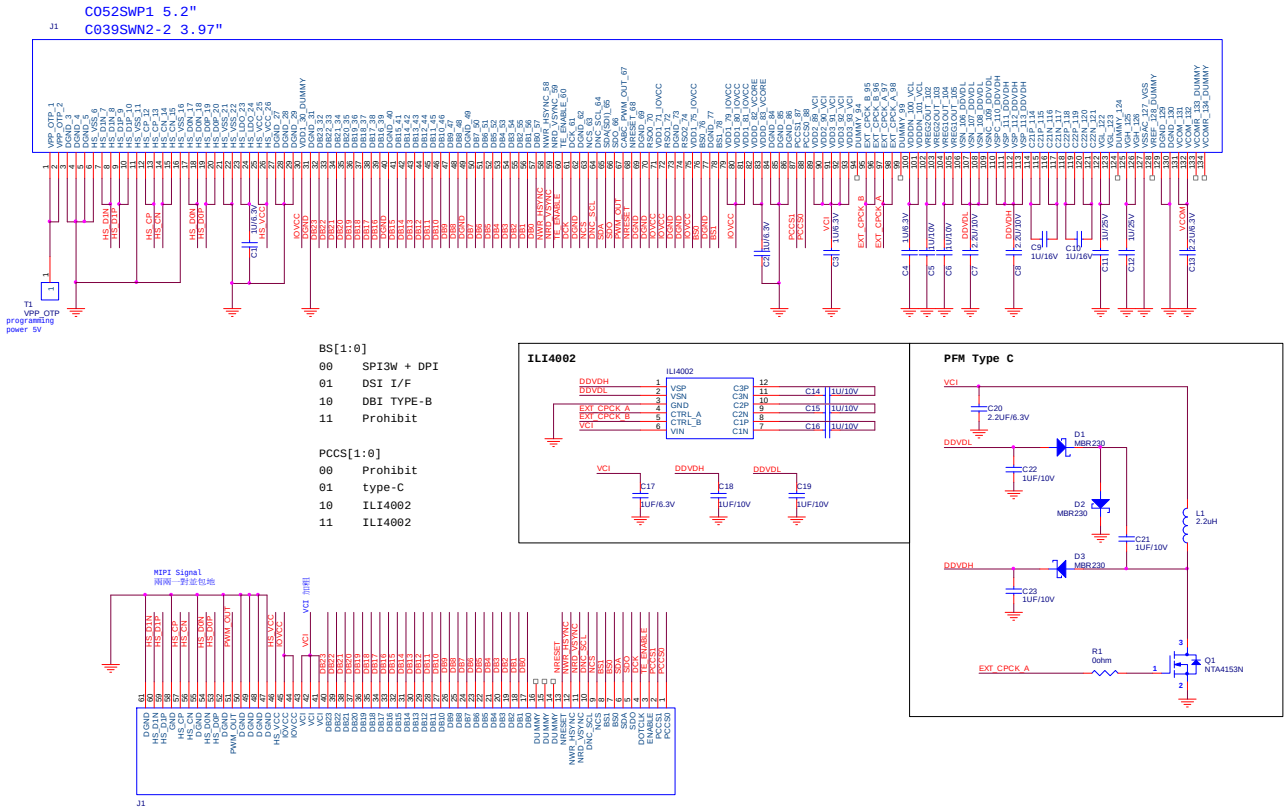


3. GP 4.3 “ Panel



4. IVO 3.97“& 5.2“ Panel

4.1 FPC Application Circuit



4.2 IVO3.97” Initial Code

```
Void ILI9805_IVO3.97_2.8V_Initial_Code(void)
{// VCI=2.8V
//************ Reset LCD Driver ****************//
LCD_nRESET = 1;
Delayms(1); // Delay 1ms
LCD_nRESET = 0;
Delayms(1); // Delay 1ms // This delay time is necessary
LCD_nRESET = 1;
Delayms(10); // Delay 10 ms
//************ Start Initial Sequence **********//
LCD_ILI9805_CMD(0XFF);              //EXTC command Password
      LCD_ILI9805_INDEX(0xFF);
      LCD_ILI9805_INDEX(0x98);
      LCD_ILI9805_INDEX(0x05);
LCD_ILI9805_CMD(0XFD);              // for PFM setting (base on PFM device characteristics)
      LCD_ILI9805_INDEX(0x0F);
      LCD_ILI9805_INDEX(0x13);
      LCD_ILI9805_INDEX(0x44);
      LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XF8);              // for PFM setting (base on PFM device characteristics)
      LCD_ILI9805_INDEX(0x18);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x18);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x02);
      LCD_ILI9805_INDEX(0x30);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x30);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x30);
      LCD_ILI9805_INDEX(0x00);
      LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XB8);              //EPF & DBI - 8/9/16/18/24 bits select
      LCD_ILI9805_INDEX(0x74);
LCD_ILI9805_CMD(0XF1);              //Gate Modulation
```

```
    LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XF2);          //CR/EQ/PC
    LCD_ILI9805_INDEX(0x00);
    LCD_ILI9805_INDEX(0x58);
    LCD_ILI9805_INDEX(0x40);
LCD_ILI9805_CMD(0XF3);
    LCD_ILI9805_INDEX(0x60);
    LCD_ILI9805_INDEX(0x83);
    LCD_ILI9805_INDEX(0x04);
LCD_ILI9805_CMD(0XFC);
    LCD_ILI9805_INDEX(0x04);    //NOW
    LCD_ILI9805_INDEX(0x0F);
    LCD_ILI9805_INDEX(0x01);
LCD_ILI9805_CMD(0XEB);
    LCD_ILI9805_INDEX(0x08);
    LCD_ILI9805_INDEX(0x0F);
LCD_ILI9805_CMD(0XE0);          //P-Gamma
    LCD_ILI9805_INDEX(0x00);
    LCD_ILI9805_INDEX(0x1B);
    LCD_ILI9805_INDEX(0x20);
    LCD_ILI9805_INDEX(0x0D);
    LCD_ILI9805_INDEX(0x10);
    LCD_ILI9805_INDEX(0x1C);
    LCD_ILI9805_INDEX(0x0B);
    LCD_ILI9805_INDEX(0x0C);
    LCD_ILI9805_INDEX(0x00);
    LCD_ILI9805_INDEX(0x03);
    LCD_ILI9805_INDEX(0x03);
    LCD_ILI9805_INDEX(0x05);
    LCD_ILI9805_INDEX(0x0B);
    LCD_ILI9805_INDEX(0X3F);
    LCD_ILI9805_INDEX(0x3E);
    LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XE1);          //N-Gamma
    LCD_ILI9805_INDEX(0x00);
    LCD_ILI9805_INDEX(0x25);
    LCD_ILI9805_INDEX(0x31);
    LCD_ILI9805_INDEX(0x14);
    LCD_ILI9805_INDEX(0x13);
```

```
        LCD_ILI9805_INDEX(0x18);
        LCD_ILI9805_INDEX(0x0C);
        LCD_ILI9805_INDEX(0x0A);
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x03);
        LCD_ILI9805_INDEX(0x01);
        LCD_ILI9805_INDEX(0x10);
        LCD_ILI9805_INDEX(0x06);
        LCD_ILI9805_INDEX(0x13);
        LCD_ILI9805_INDEX(0x0F);
        LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0XC1);          //Power Control 1
        LCD_ILI9805_INDEX(0x13);    //VGH & VGL
        LCD_ILI9805_INDEX(0x30);    //EXT Pumping CLK & Vreg1out
        LCD_ILI9805_INDEX(0x10);    //Vreg2out
        LCD_ILI9805_INDEX(0x26);    //VCI1 & VCL
LCD_ILI9805_CMD(0xC7);
        LCD_ILI9805_INDEX(0xDC);  //VCOM
LCD_ILI9805_CMD(0xB1);          //Frame Rate Control
        LCD_ILI9805_INDEX(0x00);
        LCD_ILI9805_INDEX(0x12);
        LCD_ILI9805_INDEX(0x14);
LCD_ILI9805_CMD(0xB4);          //2 Dot Inversion
        LCD_ILI9805_INDEX(0x02);
LCD_ILI9805_CMD(0xBB);
        LCD_ILI9805_INDEX(0x14);
        LCD_ILI9805_INDEX(0x55);
LCD_ILI9805_CMD(0x36);           //Memory Access
        LCD_ILI9805_INDEX(0x0A);
LCD_ILI9805_CMD(0x3A);
        LCD_ILI9805_INDEX(0x77);    //16 & 18 & 24 bits
//LCD_ILI9805_CMD(0X20);          //Display Inv-Off
LCD_ILI9805_CMD(0X21);           //Display Inv-On
LCD_ILI9805_CMD(0xB0);          //RGB I/F Polarity
        LCD_ILI9805_INDEX(0x00);
LCD_ILI9805_CMD(0xB6);          //CPU/RGB I/F Select
        LCD_ILI9805_INDEX(0x01);
LCD_ILI9805_CMD(0xC2);           //Power Control 2
        LCD_ILI9805_INDEX(0x11);
```

```
LCD_ILI9805_CMD(0xDF);              //For 4002 setting
      LCD_ILI9805_INDEX(0x23);
LCD_ILI9805_CMD(0x11);              //Sleep Out
      Delayms（120）;
LCD_ILI9805_CMD(0x29);              //Display On
      Delayms（20）;
LCD_ILI9805_CMD(0x2C);              //Memory Write
}
```

Void ILI9805_EnterSleep_Code(void)

```
{
LCD_ILI9805_CMD(0x10); // Internal oscillator will be stopped
Delayms(120);
}
```

Void ILI9805_ExitSleep_Code(void)

```
{
LCD_ILI9805_CMD(0x11); // Sleep Out
Delayms(120);
}
```

Revision History

Revision History

Version No.	Date	Page	Description
V01	2011/12/12	All	New Creation
V02	2012/02/15	All	Modified CMI3.97” FPC Circuit
V03	2012/03/20	All	Add CMI3.97” Initial Code & Add CMI3.7” FPC Circuit & Add GP4.3” FPC Circuit & Add IVO5.2” FPC Circuit
V04	2012/04/20	All	Modified CMI3.97”、CMI3.7”、GP4.3”、IVO FPC Circuit Modified CMI3.97” Initial Code Add IVO3.97” Initial Code
V05	2012/06/06	All	Modified CMI3.97”、CMI3.7”、GP4.3”、IVO FPC Circuit Modified CMI3.97” Initial Code Modified IVO3.97” Initial Code
V06	2012/08/03	All	Modified CMI3.97” Initial Code Modified IVO3.97” Initial Code
V07	2012/09/21	4、11	Modified CMI3.97” Initial Code Modified IVO3.97” Initial Code
		9	Modified GP4.3” FPC Circuit