UC8230s

Application Note

240RGB x 320 TFT LCD Controller-Driver
w/ 18-bit per RGB On-Chip SRAM

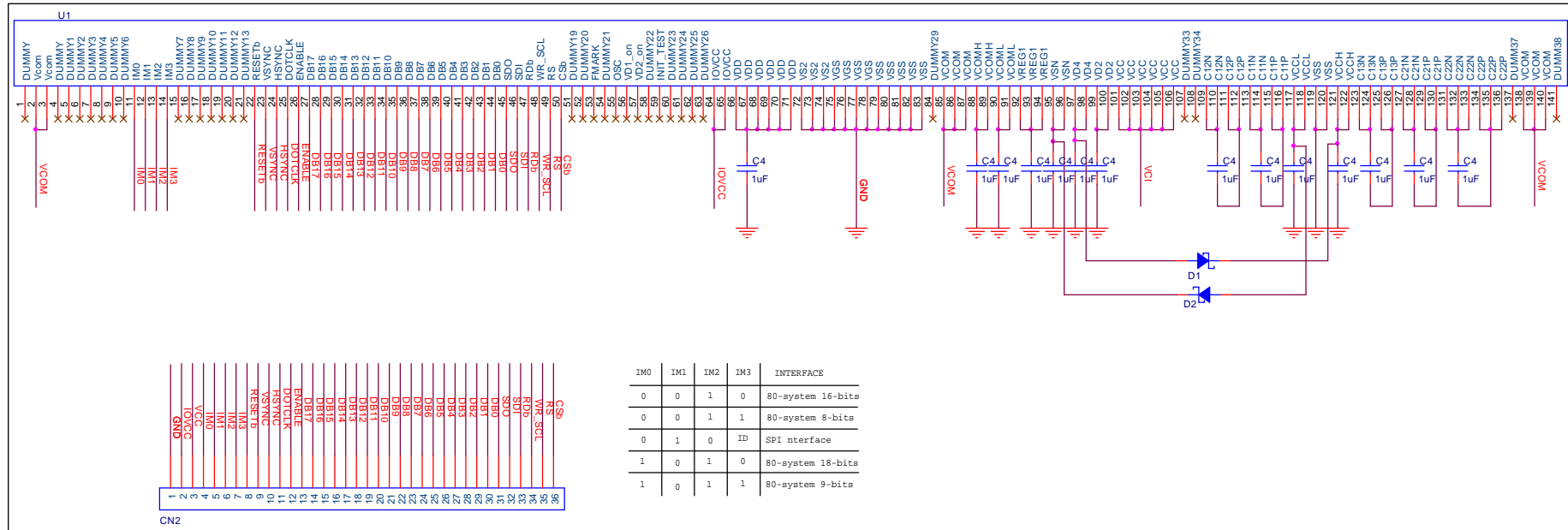**June 2, 2009**

ULTRACHIP

The Coolest LCD Drive, Ever.!'

1. Reference FPC Circuit

IM0	IM1	IM2	IM3	INTERFACE
0	0	1	0	80-system 16-bits
0	0	1	1	80-system 8-bits
0	1	0	ID	SPI nterface
1	0	1	0	80-system 18-bits
1	0	1	1	80-system 9-bits

2. Initial Code

```c
void DisplayPowerON(void)
{

//After pin Reset wait at least 100ms

delayms(100);              //at least 100ms

LCD_CtrlWrite(0x46,0x0002);//MTP Disable
LCD_CtrlWrite(0x10,0x1590);
LCD_CtrlWrite(0x11,0x0227);
LCD_CtrlWrite(0x12,0x80ff);
LCD_CtrlWrite(0x13,0x9c31);

delayms(10);               //at least 10ms

LCD_CtrlWrite(0x02,0x0300);//set N-line = 1
LCD_CtrlWrite(0x03,0x1030);//set GRAM writing direction & BGR=1

LCD_CtrlWrite(0x60,0xa700);//GS; gate scan: start position & drive line Q'ty
LCD_CtrlWrite(0x61,0x0001);//REV, NDL, VLE

/*-------------------Gamma control-----------------------*/
LCD_CtrlWrite(0x30,0x0303);
LCD_CtrlWrite(0x31,0x0303);
LCD_CtrlWrite(0x32,0x0303);
LCD_CtrlWrite(0x33,0x0300);
LCD_CtrlWrite(0x34,0x0003);
LCD_CtrlWrite(0x35,0x0303);
LCD_CtrlWrite(0x36,0x1400);
LCD_CtrlWrite(0x37,0x0303);
LCD_CtrlWrite(0x38,0x0303);
LCD_CtrlWrite(0x39,0x0303);
LCD_CtrlWrite(0x3a,0x0300);
LCD_CtrlWrite(0x3b,0x0003);
LCD_CtrlWrite(0x3c,0x0303);
LCD_CtrlWrite(0x3d,0x1400);
//--------------------------------------------------------//
LCD_CtrlWrite(0x20,0x0000);//GRAM horizontal address
LCD_CtrlWrite(0x21,0x0000);//GRAM vertical address
//************* Partial Display control*****************//
LCD_CtrlWrite(0x80,0x0000);
LCD_CtrlWrite(0x81,0x0000);
LCD_CtrlWrite(0x82,0x0000);
LCD_CtrlWrite(0x83,0x0000);
LCD_CtrlWrite(0x84,0x0000);
LCD_CtrlWrite(0x85,0x0000);
//--------------------------------------------------------//

LCD_CtrlWrite(0x92,0x0200);
LCD_CtrlWrite(0x93,0x0303);
LCD_CtrlWrite(0x90,0x0010);//set clocks/Line
LCD_CtrlWrite(0x00,0x0001);
delayms(200); // Delay 200 ms
LCD_CtrlWrite(0x07,0x0173);//Display on setting
}
```

```
void LCM_EnterSleep(void)
{
LCD_CtrlWrite(0x07,0x0173);
LCD_CtrlWrite(0x07,0x0171);
delayms(10); // Delay 10 ms
LCD_CtrlWrite(0x07,0x0170);
delayms(10); // Delay 10 ms
LCD_CtrlWrite(0x07,0x0000);
LCD_CtrlWrite(0x10,0x0000);
LCD_CtrlWrite(0x00,0x0000);
LCD_CtrlWrite(0x00,0x0004);
LCD_CtrlWrite(0x10,0x0002);
}

void LCM_ExitSleep(void)
{
LCD_CtrlWrite(0x10,0x0000);
LCD_CtrlWrite(0x10,0x0080);
LCD_CtrlWrite(0x10,0x1790);
delayms(10); // Delay 10 ms
LCD_CtrlWrite(0x00,0x0001);
delayms(100); // Delay 100 ms
LCD_CtrlWrite(0x07,0x0173);


}
```