

P12601

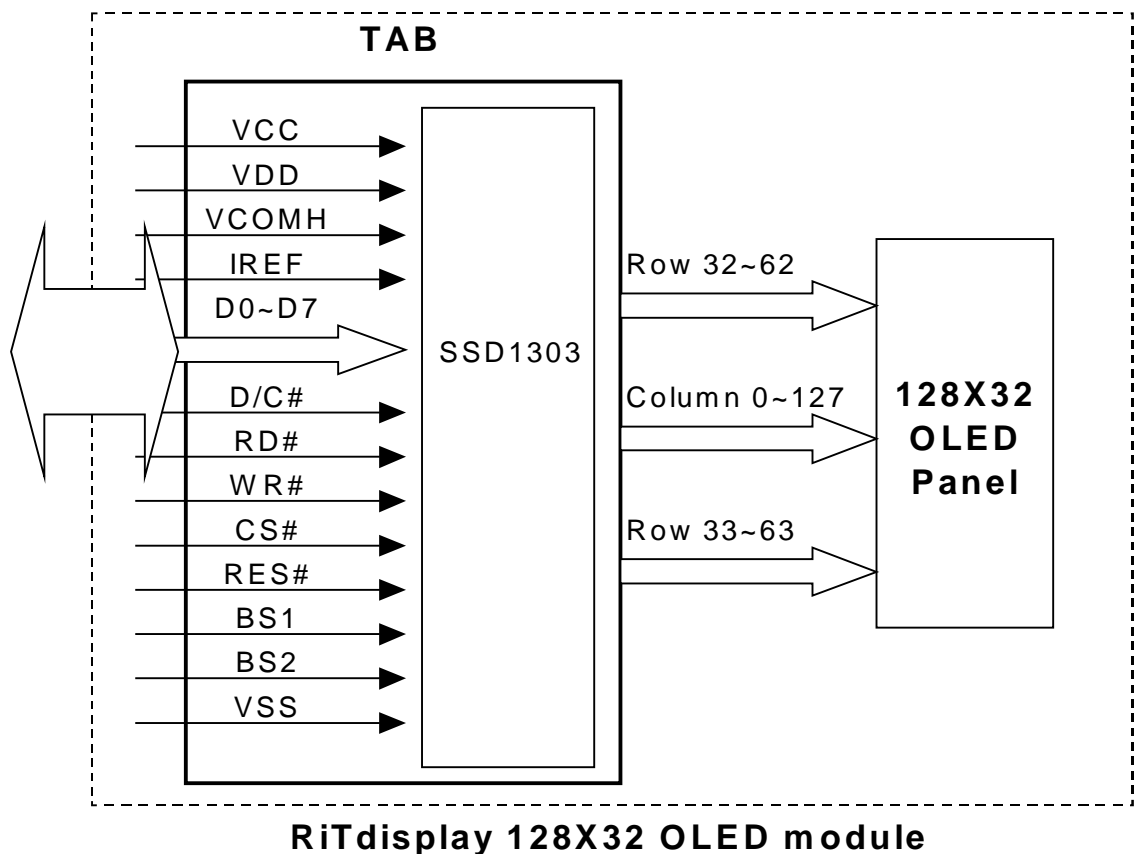
128x32 Yellow/Blue Area Color Application Notes

FEATURE

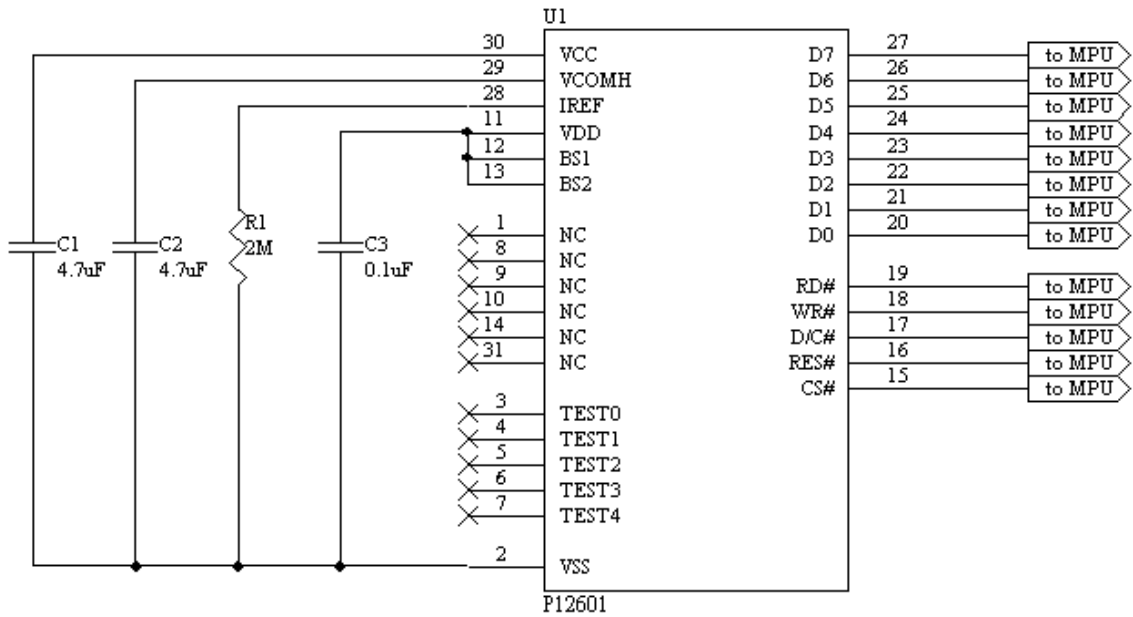
- 128x32 dot matrix yellow/blue color passive OLED module.
- Driver IC is SSD1303.
- Embedded display buffer.
- Logic voltage supply: VDD=2.4~3.5V.
- High voltage supply: VCC=10V.
- 8-bit 6800/8080-series Parallel interface.
- Vertical/Horizontal scrolling function.
- Internal oscillator circuit.

Programmable frame frequency and multiplexing Ratio.

FUNCTION BLOCK DIAGRAM



128x32 OLED module external application circuit

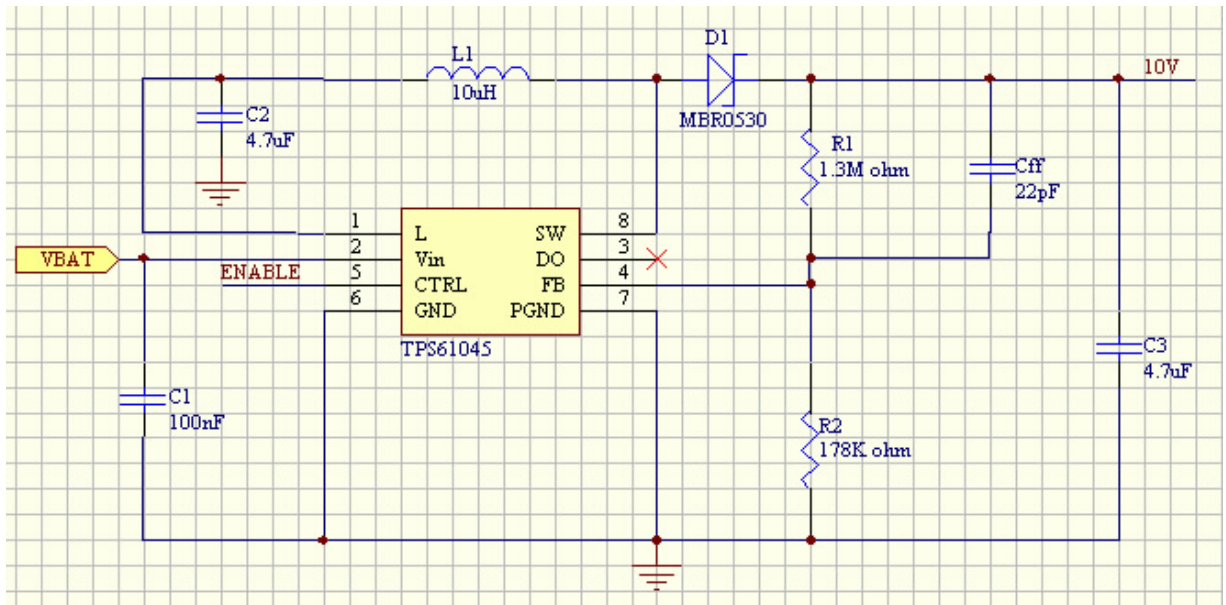


Recommended components

C1:4.7uF/16V, C2:4.7uF/16V, C3:0.1uF/16V,
Resistor: 2M ohm, 1%

This circuit is designed for 8080 interface

DC-DC CIRCUIT



The R1 & R2 value should be adjust by DC-DC IC vendor.

Pin Assignments

PIN NAME	PIN NO.	TYPE	DESCRIPTION
NC	1	-	No connection
VSS	2	I	This is a ground pin.
Test 0	3	-	Reserved pin; No connection and left float
Test 1	4	-	Reserved pin; No connection and left float
Test 2	5	-	Reserved pin; No connection and left float
Test 3	6	-	Reserved pin; No connection and left float
Test 4	7	-	Reserved pin; No connection and left float
NC	8	-	No connection
NC	9	-	No connection
NC	10	-	No connection
VDD	11	I	Voltage power supply for logic
BS1	12	I	MCU interface selection input
BS2	13	I	MCU interface selection input
NC	14	-	No connection
CS#	15	I	This is a chip select control pin.
RES#	16	I	Hardware reset signal
D/C#	17	I	This is a Data/Command control pin.
WR#	18	I	This pin is used to receive the Write Data signal.
RD#	19	I	This pin is used to receive the Read Data signal.
D0	20	I/O	This pin is bi-direction data signal
D1	21	I/O	This pin is bi-direction data signal
D2	22	I/O	This pin is bi-direction data signal
D3	23	I/O	This pin is bi-direction data signal
D4	24	I/O	This pin is bi-direction data signal
D5	25	I/O	This pin is bi-direction data signal
D6	26	I/O	This pin is bi-direction data signal
D7	27	I/O	This pin is bi-direction data signal
IREF	28	I	A resistor should be connected between this pin and VSS
VCOMH	29	I	A capacitor should be connect between this pin and VSS
VCC	30	I	Positive high voltage power supply
NC	31	-	No connection

```
/* 128 x 32 OLED Driver Demo program by Steve */
```

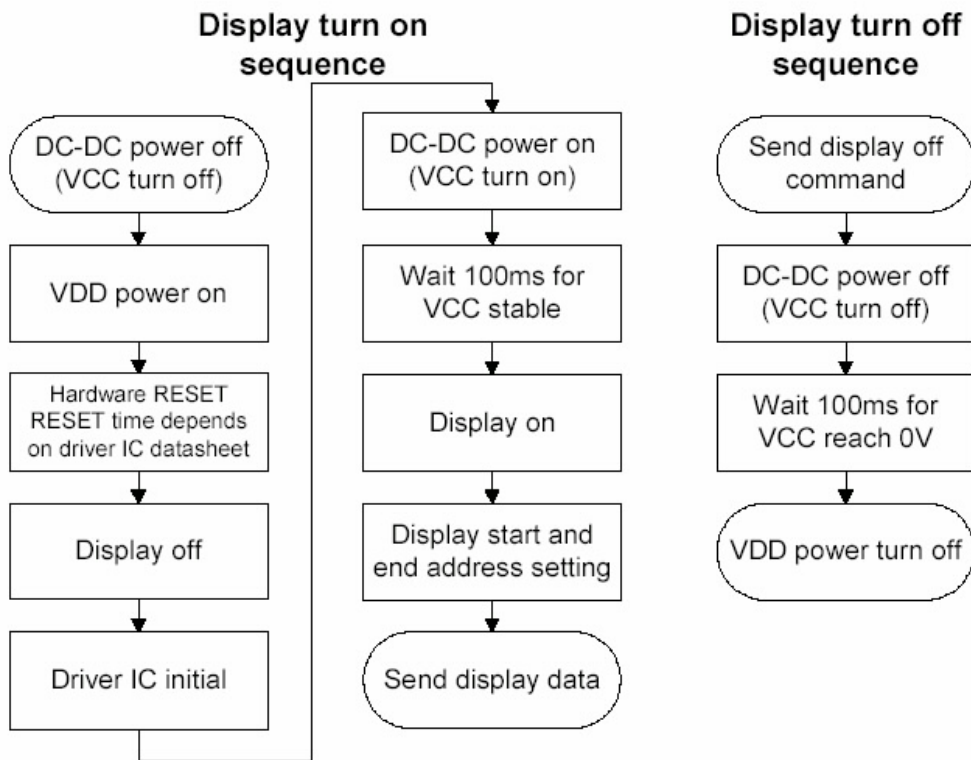
```
void init_oled()
{
    comm_out2(0xAE); //Display off
    comm_out2(0xAD); //Internal DC-DC off
    comm_out2(0x8A); // Second byte
    comm_out2(0xA8); //MUX Ratio
    comm_out2(0x1F); //32 duty
    comm_out2(0xD3); //Display offset
    comm_out2(0x20); //Second byte
    comm_out2(0x40); //Start line
    comm_out2(0xA1); //Segment remap
    comm_out2(0xC8); //COM remap
    comm_out2(0xA6); //Set normal/inverse display (0xA6:Normal display)
    comm_out2(0xA4); //Set entire display on/off (0xA4:Normal display)
    comm_out2(0x81); //Contrast setting
    comm_out2(0x3F); //Second byte
    comm_out2(0xD5); //Frame rate
    comm_out2(0x61); // 85 Hz
    comm_out2(0xD8); //Mode setting
    comm_out2(0x00); //Mono mode
    comm_out2(0xAF); //Display on
}

void write_data()
{
    int j, i;

    for(i=0;i<4;i++)
    {
        comm_out2(0xB0+i); //set page
        comm_out2(0x04); // Lower col address
        comm_out2(0x10); // Higher col address

        for(j=0;j<128;j++) //out data
            data_out2(0xFF);
    }
}
```

Power Up/Down Sequence



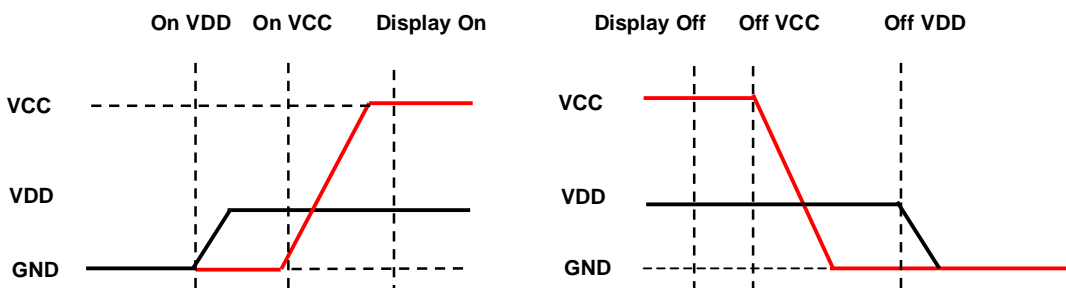
To protect OLED panel and extend the panel lifetime, the driver IC power up/down routine should include a delay period between high voltage and low voltage power sources turn on/off.

Power up Sequence:

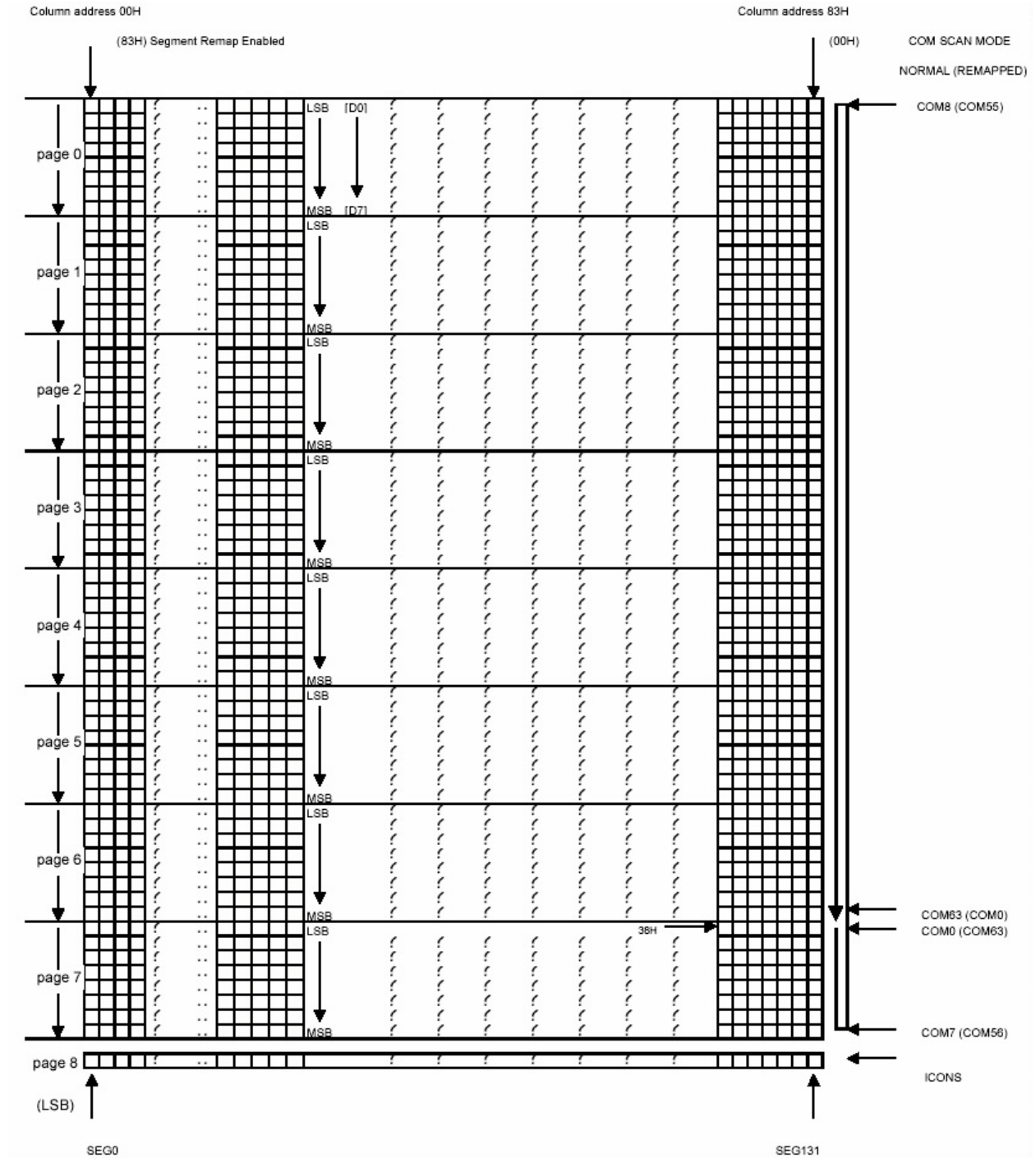
1. Power up VDD
2. Hardware RESET
3. Send display off command
4. Power up VCC
5. Delay 100ms (when VCC is stable)
6. Send Display on command

Power down Sequence:

1. Send Display off command
2. Power down VCC
3. Delay 100ms (When VCC is reach 0 and panel is completely discharges)
4. Power down VDD



Graphic Display Data RAM Address Map



Thank You

