

## ST7920 12864B V2.0 Wiring and Arduino Documentation (ug8lib)

### PINS CONNECTIONS:

PIN 1 on LCD [VSS] to Ground  
 PIN 2 on LCD [VDD] to 5V (powered by arduino)  
 PIN 3 on LCD [V0] to middle pin of the POT  
 PIN 4 on LCD [RS] to D10 (arduino)  
 PIN 5 on LCD [R/W] to D11 (arduino)  
 PIN 6 on LCD [E] to D13 (arduino)  
 PIN 15 on LCD [PSB] to Ground  
 PIN 18 on LCD [VOUT] to PIN3 Pot (\*)  
 PIN 19 on LCD [BLA] to 5V  
 PIN 20 on LCD [BLK] to Ground

### Pot:

PIN 1 to 5V (powered by arduino)  
 PIN 2 to PIN 3 on LCD [V0]  
 PIN 3 to PIN 18 on LCD [VOUT]

PINS:



Forum Discussion: <http://forum.arduino.cc/index.php?topic=133736.0>

### Hello World Sample Code:

```
#include "U8glib.h"
```

```
// setup u8g object, please remove comment from one of the following constructor calls
```

```
U8GLIB_ST7920_128X64 u8g(13, 11, 10, U8G_PIN_NONE); // SPI Com: SCK = en = 13, MOSI = rw = 11, CS = di = 0
```

```
void draw(void) {
```

```
// graphic commands to redraw the complete screen should be placed here
```

```
u8g.setFont(u8g_font_unifont);
```

```
//u8g.setFont(u8g_font_osb21);
```

```
u8g.drawStr( 0, 22, "Hello World!");
```

```
}
```

```
void setup(void) {
```

```
// flip screen, if required
```

```
// u8g.setRot(180);
```

```
// set SPI backup if required
```

```
//u8g.setHardwareBackup(u8g_backup_avr_spi);
```

```
// assign default color value
```

```
if ( u8g.getMode() == U8G_MODE_R3G3B2 )
```

```
u8g.setColorIndex(255); // white
```

```
else if ( u8g.getMode() == U8G_MODE_GRAY2BIT )
```

```
u8g.setColorIndex(3); // max intensity
```

```
else if ( u8g.getMode() == U8G_MODE_BW )
```

```
u8g.setColorIndex(1); // pixel on
```

### DATASHEET:

2 MECHANICAL DATA			3 PIN CONFIGURATION				
ITEM	SPECIFICATION	UNIT	ITEM	SYMBOL	DESCRIPTION		
Display Size (H x W x D)	30.0 x 42.0 x 1.5	mm	VDD	VDD	Power supply		
Display Area (H x W)	28.0 x 40.0	mm	VSS	VSS	Power ground		
Character Size (H x W)	1.28 x 0.64	mm	V0	V0	Maximum Resistor voltage (apply for V0)		
Dot Pitch (H x W)	0.125 x 0.125	mm	RS	RS	Read/Write Control		
Pin Pitch (H x W)	0.50 x 0.50	mm	RW	RW	Read/Write		
Case	ST7920-B1	-	E	E	Enable Signal		
4 BLOCK DIAGRAM			5 ABSOLUTE MAXIMUM RATINGS (25°C)				
VSS	POWER	LCD PANEL	PARAMETER	ST7920	MIN.	MAX.	UNIT
VDD	POWER	LCD PANEL	Supply Voltage (VDD)	VDD	-	5.5	V
V0	POT	LCD PANEL	Supply Voltage (V0)	V0	-	5.5	V
E	ENABLE	LCD PANEL	Supply Voltage (VOUT)	VOUT	-	5.5	V
RS	RS	LCD PANEL	Supply Voltage (VBLA)	VBLA	-	5.5	V
RW	RW	LCD PANEL	Supply Voltage (VBLK)	VBLK	-	5.5	V
PSB	PSB	LCD PANEL	Supply Voltage (VOUT)	VOUT	-	5.5	V
LED+	LED+	LED BACKLIGHT	Supply Voltage (VOUT)	VOUT	-	5.5	V
LED-	LED-	LED BACKLIGHT	Supply Voltage (VOUT)	VOUT	-	5.5	V

### IMAGES:



```
}

void loop(void) {
  // picture loop
  u8g.firstPage();
  do {
    draw();
  } while( u8g.nextPage() );
  // rebuild the picture after some delay
  delay(500);
}
```

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