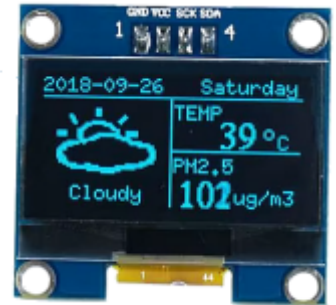


SSH1106/SSD1306 OLED Display with I²C communication

The SSD1306 and SH1106 (often misspelled as SSH1106 or SSH1306) are both popular single-chip CMOS OLED drivers used for small monochrome displays (0.91", 0.96", 1.3"). While they are very similar and often share the same I²C address (0x3C), they are not directly compatible because of differences in memory mapping and supported operating modes.







The key difference is that the SH1106 has more internal RAM (132×64) compared to the SSD1306 (128×64). As a result, a 128×64 display using an SH1106 chip may display garbage pixels or appear shifted by 2 pixels on each side when controlled with a standard SSD1306 library.

- **SSD1306:** Works with standard libraries like Adafruit_SSD1306
- **SH1106:** Requires specific libraries, such as Adafruit_SH110x or U8g2 (using U8G2_SH1106_128X64_NONAME...)

Feature	SSD1306	SH1106 (SSH1106)
Max Resolution	128 x 64	132 x 64
Internal RAM	128 x 64 bits	132 x 64 bits
Addressing	Page, Horizontal, Vertical	Mostly Page Mode only
Hardware Scroll	Yes	No
Typical Use	0.96" OLED	1.3" OLED
Driver Library	Adafruit_SSD1306	U8g2 / Adafruit_SH110x


Both are commonly used with Arduino, Raspberry Pi, and ESP8266/ESP32 via I²C (SDA/SCL) or SPI, typically requiring only 4 pins (VCC, GND, SDA, SCL). If an SH1106 display is initialized with an SSD1306 library, the screen will likely show "garbage" or shifted lines.

SSH1106 Chip 128 x 64 Pixel	SSD1306 Chip 64x48 Pixel	SSD1306 Chip 128 x 32 Pixel	SSD1306 Chip 128 x 64 Pixel
			
0.96 Inch	0.96 Inch	0.91 Inch	-

Pinout

Pin Label	Function	Description
GND	Ground	Ground (0V)
VCC	Power	3.3V or 5V (Most modules have a voltage regulator)
SCL	Clock	I ² C Clock (D0 pin)
SDA	Data	I ² C Data (D1 pin)

- Note on Ordering: On some cheap modules, VCC and GND are swapped. Verify your module label before powering it up to avoid damage.
- I²C Address: Usually **0x3C** or **0x3D**.





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Features of particular types

Name	ID	Characteristics
AZ-Delivery 1.30' IIC V21		1.3 inch OLED Display SH1106 128 x 64 pixel
AZ-Delivery 0.96 inch OLED SSD1306		0.96 inch OLED SSD1306 128 x 64 pixel

SSH1106 Arduino

1. Installing the **olikraus/u8g2** library (installation only works manually) from here: <https://github.com/olikraus/u8g2>
2. Example program:

```
#include <Arduino.h>
#include <U8g2lib.h>
#include <Wire.h>

// Constructor for SH1106 128x64 I2C (Hardware I2C)
// U8G2_R0: No rotation. U8X8_PIN_NONE: No hardware reset pin.
U8G2_SH1106_128X64_NONAME_1_HW_I2C u8g2(U8G2_R0, /* reset=*/ U8X8_PIN_NONE);

void setup(void) {
```

```

u8g2.begin();
}

void loop(void) {
  u8g2.firstPage();
  do {
    // https://docs.rs/u8g2-fonts/latest/u8g2_fonts/fonts/index.html
    u8g2.setFont(u8g2_font_ncenB14_tr); // Set font
    u8g2.drawStr(0, 24, "Hello World!"); // Draw text
  } while ( u8g2.nextPage() );
}

```

I²C topics on lamaPLC

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