SH1106Ultimate Hardware Documentation

● STM32F411E-DISCOVERY

Key features

- STM32F411VET6 microcontroller featuring 512 KB of Flash memory, 128 KB of RAM in an LQFP100 package
- On-board ST-LINK/V2 with selection mode switch to use the kit as a standalone ST-LINK/V2 (with SWD connector for programming and debugging)
- Board power supply: through USB bus or from an external 5 V supply voltage
- External application power supply: 3 V and 5 V
- L3GD20: ST MEMS motion sensor 3-axis digital output gyroscope
- LSM303DLHC: ST MEMS system-in-package featuring a 3D digital linear acceleration sensor and a 3D digital magnetic sensor
- MP45DT02: ST MEMS audio sensor, omnidirectional digital microphone
- CS43L22, audio DAC with integrated class D speaker driver
- Eight LEDs:
  - LD1 (red/green) for USB communication
  - LD2 (red) for 3.3 V power on
  - Four user LEDs: LD3 (orange), LD4 (green), LD5 (red) and LD6 (blue)
  - Two USB OTG LEDs: LD7 (green) VBus and LD8 (red) over-current

- Two push-buttons (user and reset)
- USB OTG with micro-AB connector
- Extension header for LQFP100 I/Os for a quick connection to the prototyping board and an easy probing
- Comprehensive free software including a variety of examples, part of STM32CubeF4 package or STSW-STM32136 for legacy Standard Libraries usage

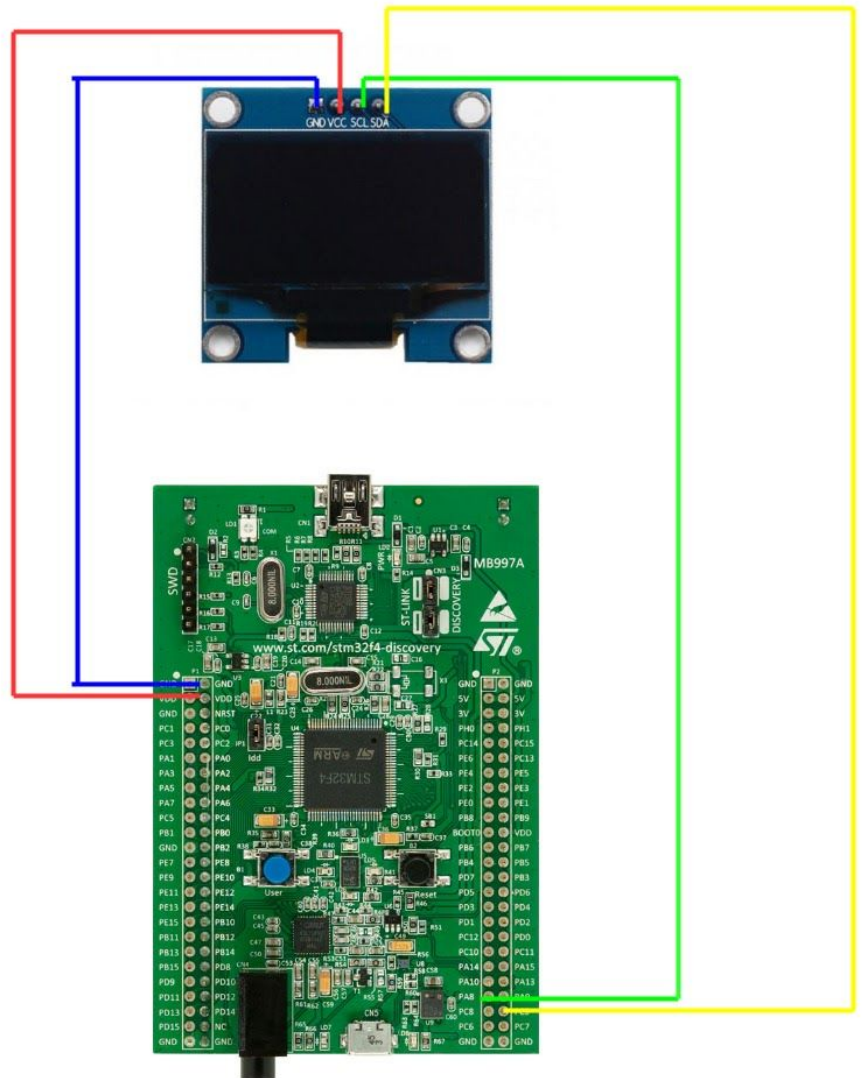## ● OLED Display

- Resolution:
  - 128x64
- Type:
  - OLED
- Internal drive chip:
  - SH1106
- Supported communication protocols:
  - I2C
- 4 pins:
  - GND — Ground;
  - VCC — 5V;
  - SCK — I2C Clock;
  - SDA — I2C Data;

● Pinout and Wiring scheme

Pinout:

STM32 --> OLED

* Red: Vdd --> Vcc
* Blue: GND --> GND
* Green: PA8 --> SCL
* Yellow: PC9 --> SDA

Datasheets will be included in *docs/datasheets* **for more detailed information on the devices.**