OLED Displays for STM32 in Arduino IDE

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Introduction

- This presentation focuses on the use of OLED displays based on the SH1106 driver with STM32 microcontrollers in the Arduino IDE environment. It utilizes SPI communication and provides specific examples and code.

Hardware Overview

- STM32 microcontrollers provide flexibility and performance for projects using OLED displays.

- OLED displays with the SH1106 driver are high-contrast monitors with fast refresh rates.

Using OLED Displays

- For working with OLED displays, we use the Adafruit SH1106 and Adafruit GFX libraries.

- Adafruit SH1106 Library: https://github.com/Tamakichi/Adafruit_SH1106_STM32

- Initialization of the display:

- Adafruit_SH1106 display(OLED_DC, OLED_RESET, OLED_CS, SPI_PORT);

- display.begin(SH1106_SWITCHCAPVCC);

- display.display();

Code Examples for OLED Displays

- Sample code for initializing the OLED display:

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- Adafruit_SH1106 display(OLED_DC, OLED_RESET, OLED_CS, SPI_PORT);

- display.begin(SH1106_SWITCHCAPVCC);

- display.clearDisplay();

- display.drawPixel(10, 10, WHITE);

- display.display();

Further Examples for OLED Display

- Drawing examples:

- display.drawCircle(display.width()/2, display.height()/2, 10, WHITE);

- display.fillRect(20, 20, 50, 30, WHITE);

- display.display();

Conclusion and Further Experiments

- Further experiments include:

- Integrating additional sensors for displaying data on the OLED screen

- Utilizing advanced graphic functions from the Adafruit GFX library

Now it is the time for your own experiments!