Main Connections

SPI Interface (for command/data transmission)

- **SPI5** is used for communication with the display controller
- **MOSI**: PF9 (SPI5_MOSI)
- **MISO**: PF8 (SPI5_MISO)
- **SCK**: PF7 (SPI5_SCK)
- **CS (Chip Select)**: Software controlled (no hardware pin shown in code)

Control Pins

- **Reset (RESET)**: PD3 (active low)
- **Data/Command (DC)**: PD13 (high for data, low for command)

LTDC Interface (for display data)

The LTDC (LCD-TFT Display Controller) interface uses multiple GPIO pins for RGB data and control signals:

RGB Data Pins:

- **R0-R7**:
    - PG13 (R0)
    - PI10, PI11, PI12, PI15, PI8, PI9 (R1-R6)
- **G0-G7**:
    - PB7, PB8, PB10, PB11, PB12 (G0-G4)
    - PK0, PK6 (G5-G6)
    - PH6 (G7)
- **B0-B7**:
    - PG6, PG5, PG4, PG3, PG7, PG2 (B0-B5)

LTDC Control Signals:

- **HSYNC, VSYNC, DE, PCLK**: PK4, PK5, PK6, PK7

Power Considerations

- The code doesn't show power connections, but typically you'd need:
    - 3.3V or appropriate voltage for display logic
    - Backlight power (may require separate driver circuit)

Frame Buffer

- The frame buffer is located in external SDRAM at address **0xC0000000**

- Size: 480x480x3 bytes (for RGB666 format)

Initialization Sequence

The display is initialized through:

1. Hardware reset (PD3)
2. SPI commands to configure display parameters
3. LTDC configuration for pixel data transfer

Usage Example

The main.c shows a simple test pattern that cycles through red, green, and blue full-screen colours every second.