JDI Screen + LB551 Debugging Guide

Overview

Hardware used in this document:

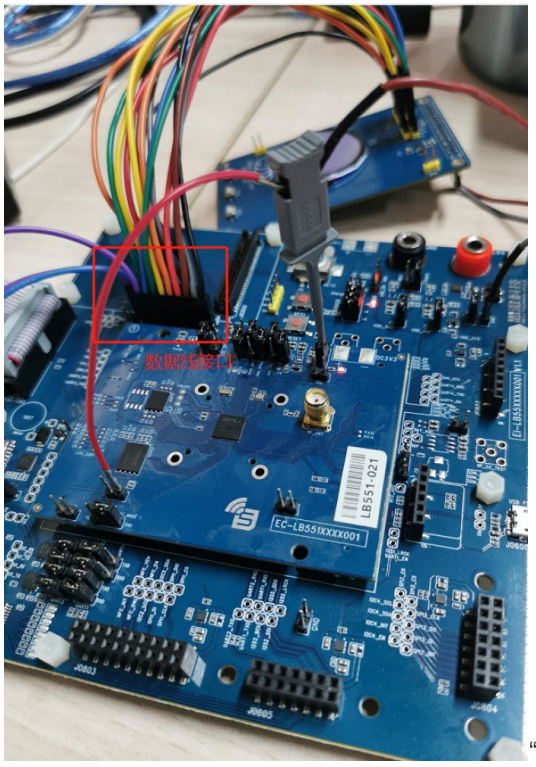
- SiFli LB551 core board + EI_LB55XXXXXX001_V1.1 base board + JDI screen (JDI387A)
- Jlink debugger

Software used:

- SiFli SDK V1.0.4 version and related development environment

Hardware

Data Cable Connections



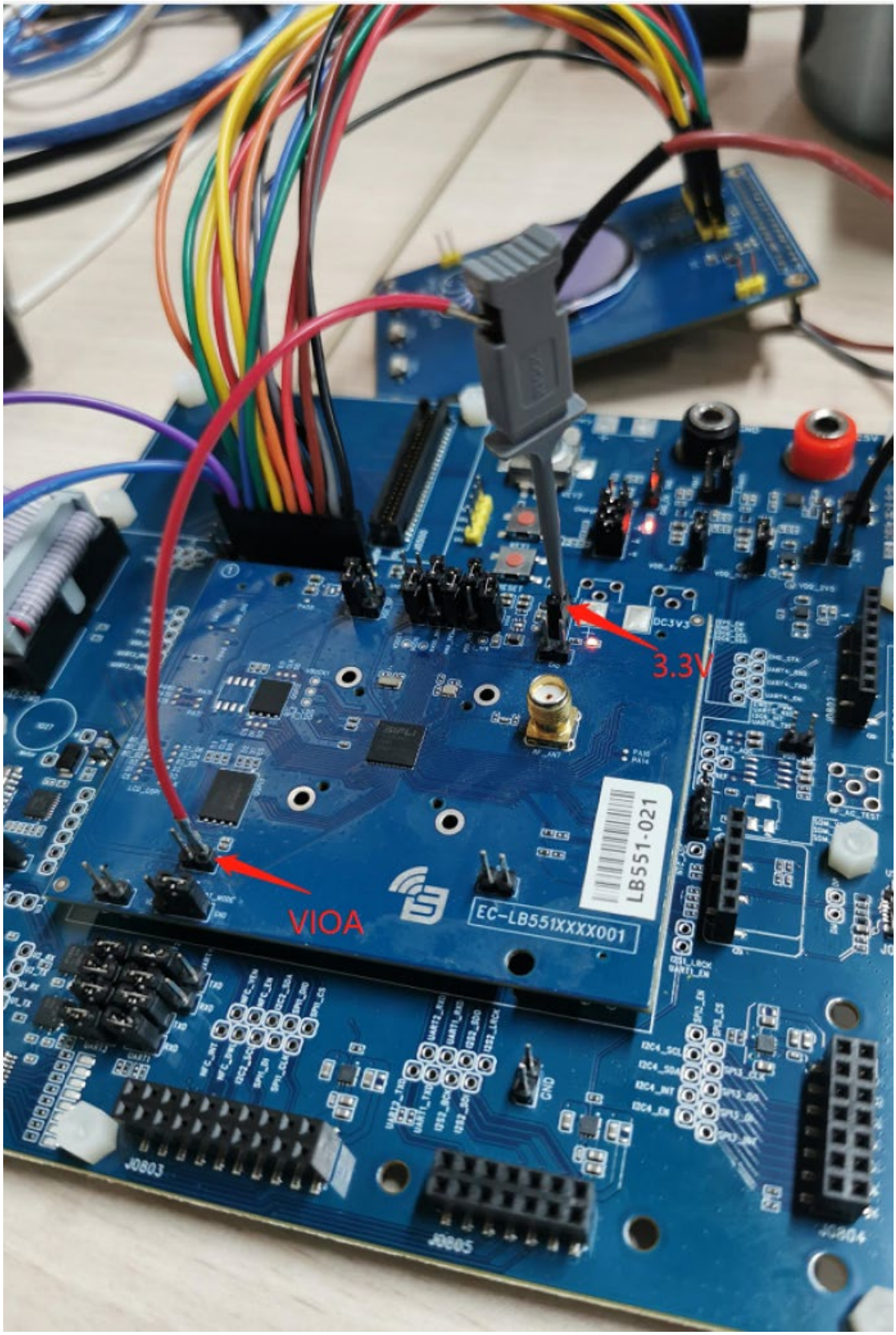
“数据线接口”：Data cable interface

Function 0	V1.1 Base Board Pin Silk Screen	JDI
GPIO_A51	D6	R2
GPIO_A47	D4	VCOM
GPIO_A44	D2	FRP
GPIO_A38	QD2	HST
GPIO_A20	CLK	VCK
GPIO_A34	QD0	XRST
GPIO_A77	TE	G2
GPIO_A79	EN	B2

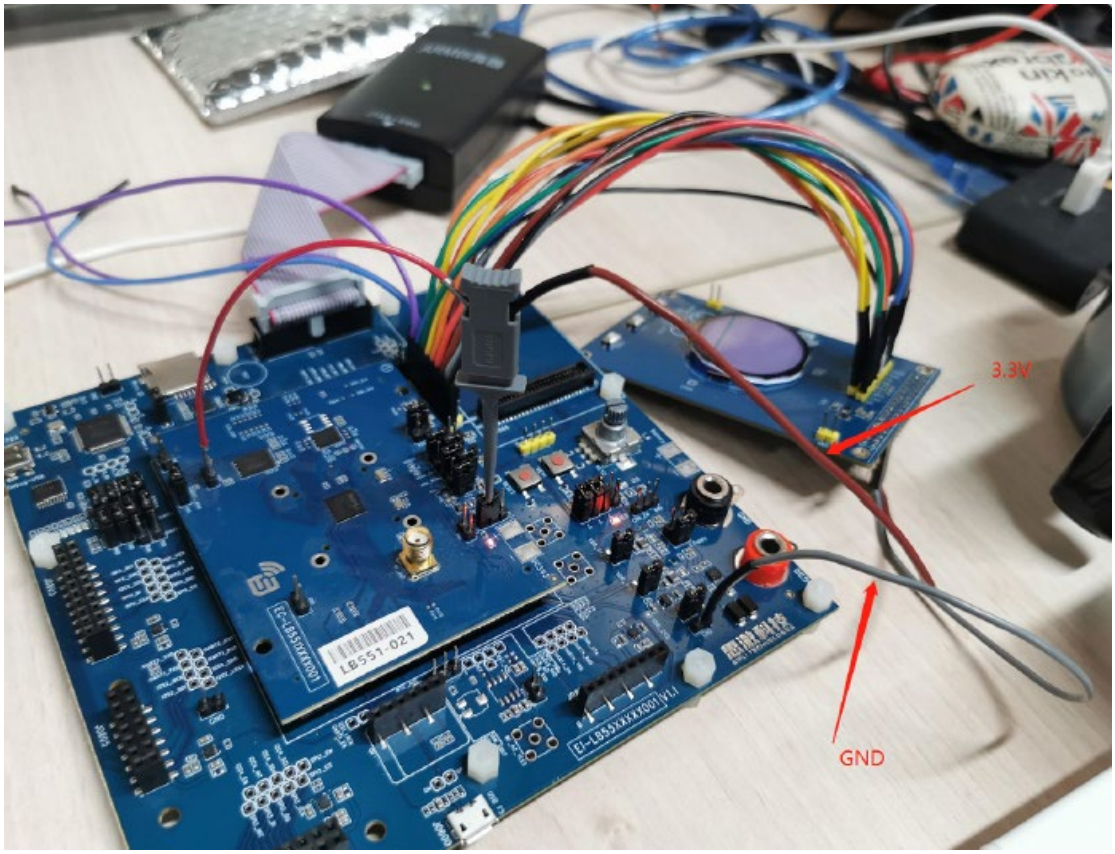
Function 0	V1.1 Base Board Pin Silk Screen	JDI
GPIO_A55	D7	G1
GPIO_A49	D5	R1
GPIO_A45	D3	XFRP
GPIO_A42	QD3	ENB
GPIO_A31	CS	VST
GPIO_A36	QD1	HCK
GPIO_A78	RST	B1

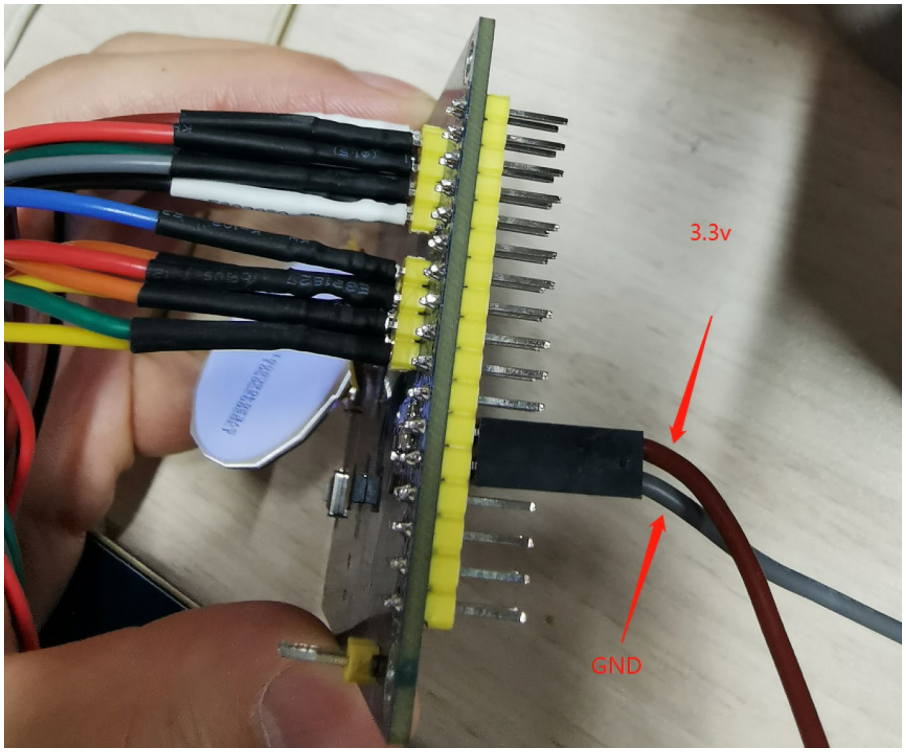
Power Supply

Set the development board's VIOA voltage level to 3.3V (Because the JDI interface used here is 3.3V).


3.3V
VIOA
LB551-021
EC-LB551XXXX001
J0803
J0805
J0804

Screen Power Supply





The screen requires external 3.3V power supply and GND connection.

Software

There are 2 projects available for debugging:

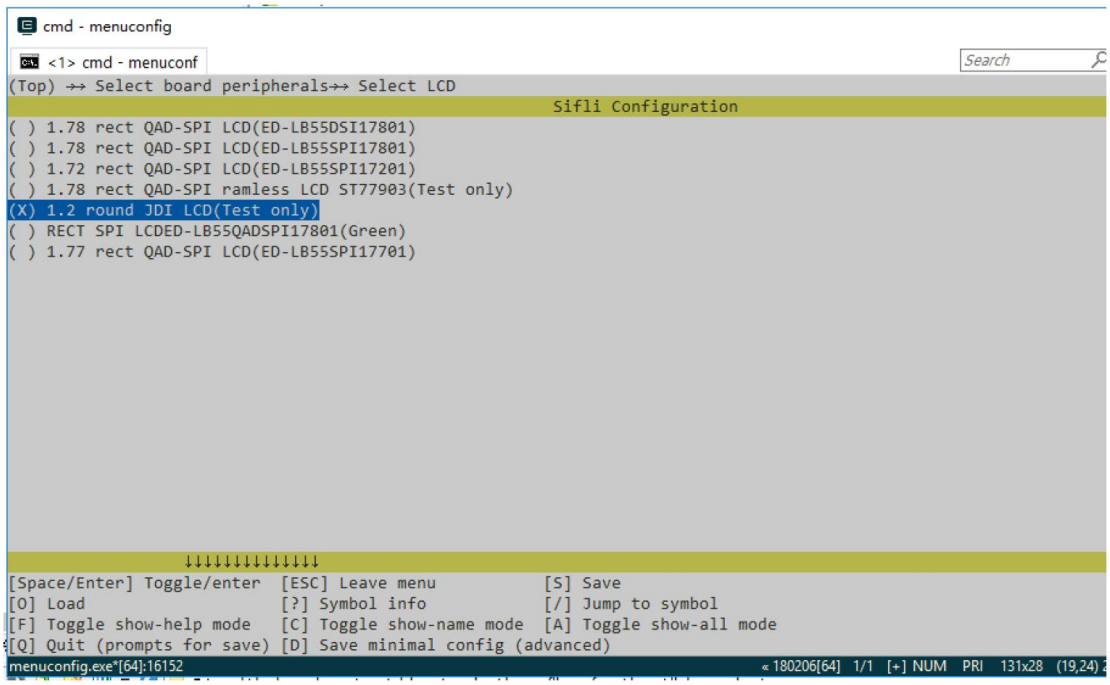
- **rt_driver project** - A simple project for debugging screen touch functionality
- **watch_demo project** - This project is a sample project for watch solutions, more complex

Running rt_driver Project

Project Path:

SiFli_Release_V1.0.4\example\rt_driver\project\ec-lb551

menuconfig Configuration:



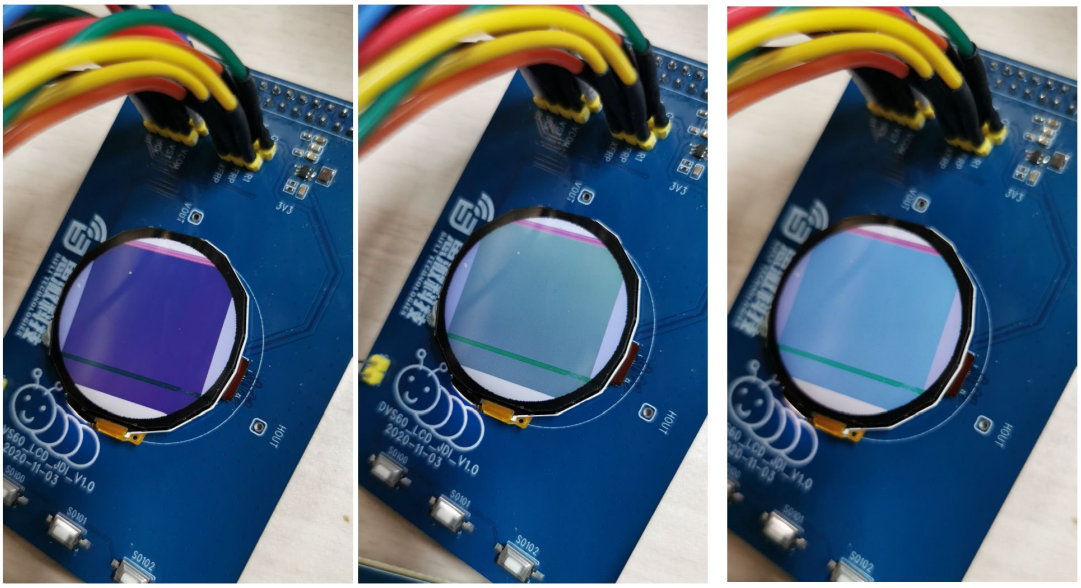
In the menuconfig interface, select:

- Board peripherals → Select LCD
- Choose: 1.72 round JDI LCD(Test only)

The configuration shows options for different LCD types including:

- 1.78 rect QAD-SPI LCD(ED-LB55D5117801)
- 1.78 rect QAD-SPI LCD(ED-LB55P117801)
- 1.72 rect QAD-SPI LCD(ED-LB55P117701)
- 1.78 rect QAD-SPI ramless LCD ST77903(Test only)
- 1.72 round JDI LCD(Test only) ← Select this option
- RECT SPI LCD(ED-LB55QADSP117801)(Green)
- 1.77 rect QAD-SPI LCD(ED-LB55P117701)

Effect Images:



The rt_driver project demonstrates basic display functionality with

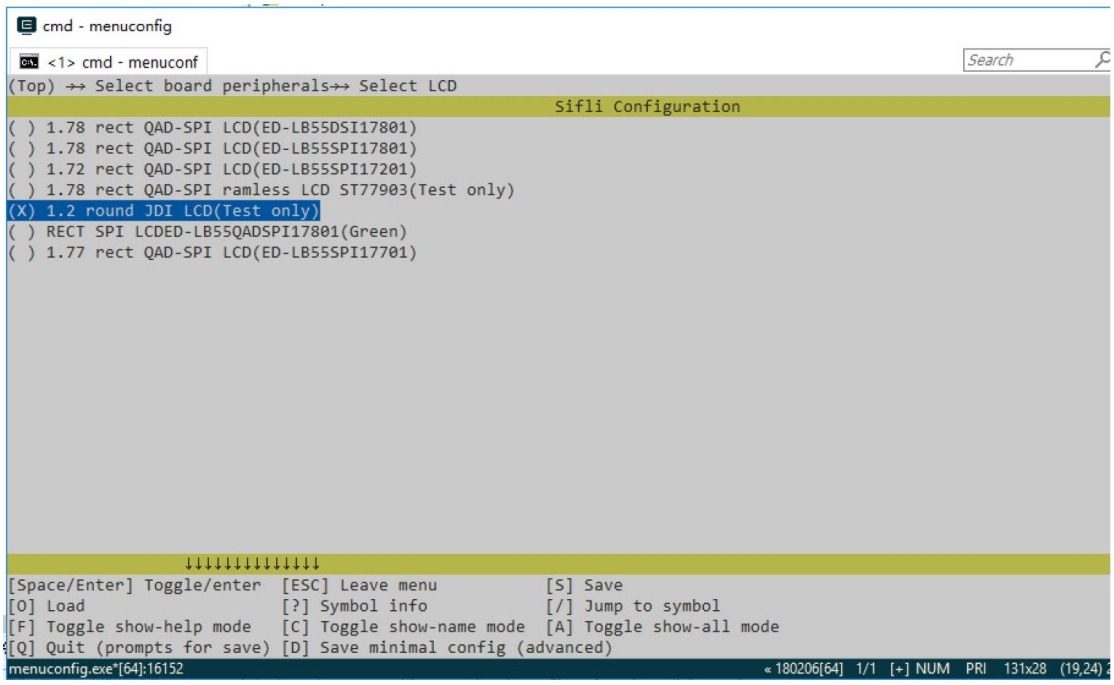
simple graphics and color patterns on the circular JDI screen.

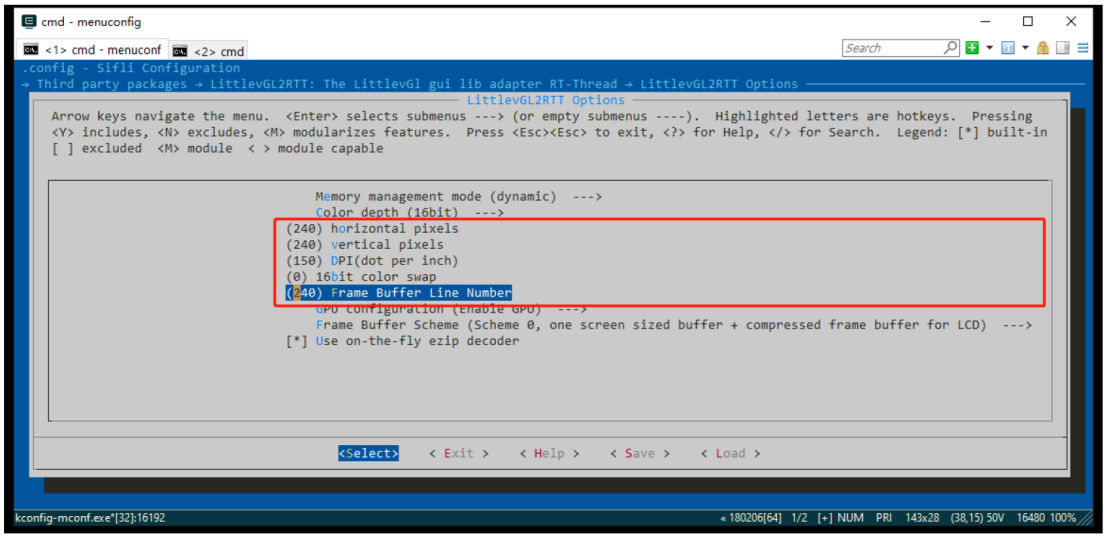
Running watch_demo Project

Project Path:

SiFli_Release_V1.0.4\example\watch_demo\project\ec-lb551

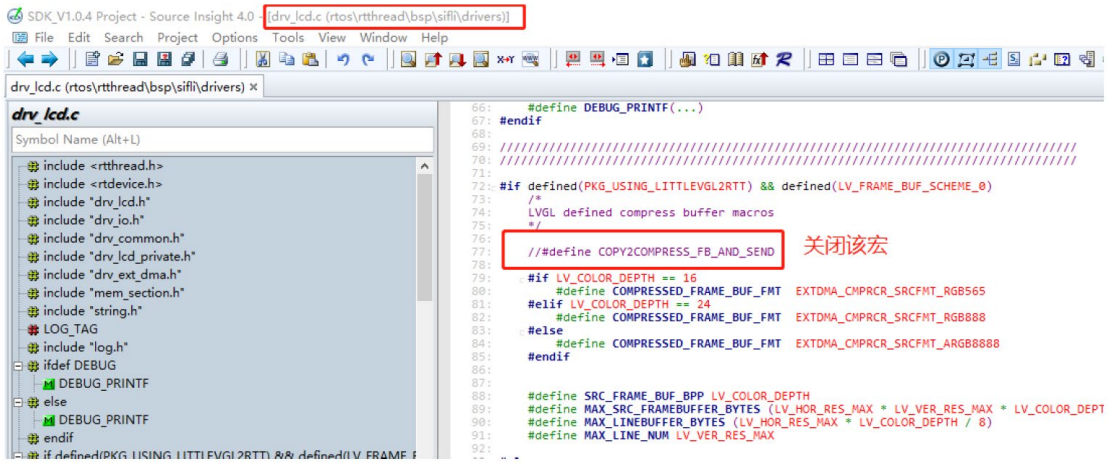
menuconfig Configuration:





Similar to rt_driver, select the JDI LCD option in menuconfig.

Modify Code to Disable PSRAM framebuffer:



In the configuration menu, navigate to:

- SiFli Configuration → Memory management mode (dynamic)
- Disable the PSRAM framebuffer options:
    - (240) horizontal pixels
    - (240) vertical pixels
    - (16) RGB565 per inch
    - Use RGB 16bit color format
    - Use configuration template no_buffer

Fix a Bug in the Code:

Move the file:

FROM:

SiFli_Release_V1.0.4\example\watch_demo\resource\images\common\ezip\kaleidoscope.png

TO:

SiFli_Release_V1.0.4\example\watch_demo\resource\images\common\no_ezip\kaleidoscope.png

Effect Images:

The watch_demo project displays a complete watch interface with:

- Application grid layout with various app icons
- Circular interface optimized for the round JDI display
- Interactive elements and transitions
- Watch faces and menu systems

The final result shows a functional smartwatch interface running on the JDI circular display, demonstrating both simple graphics rendering (rt_driver) and complex UI functionality (watch_demo).

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2020-11-03
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