

QSPI and I²C to Drive LCD Screen

Introduction

This sample code demonstrates how to use QSPI interface to drive LED, and I²C to drive touch module.

Note: This sample code is written based on Artery's V2.x.x BSP. For other versions of BSP, users should pay attention to the differences in use.

Applicable products:

Product series	AT32F435
	AT32F437

List of major peripherals used:

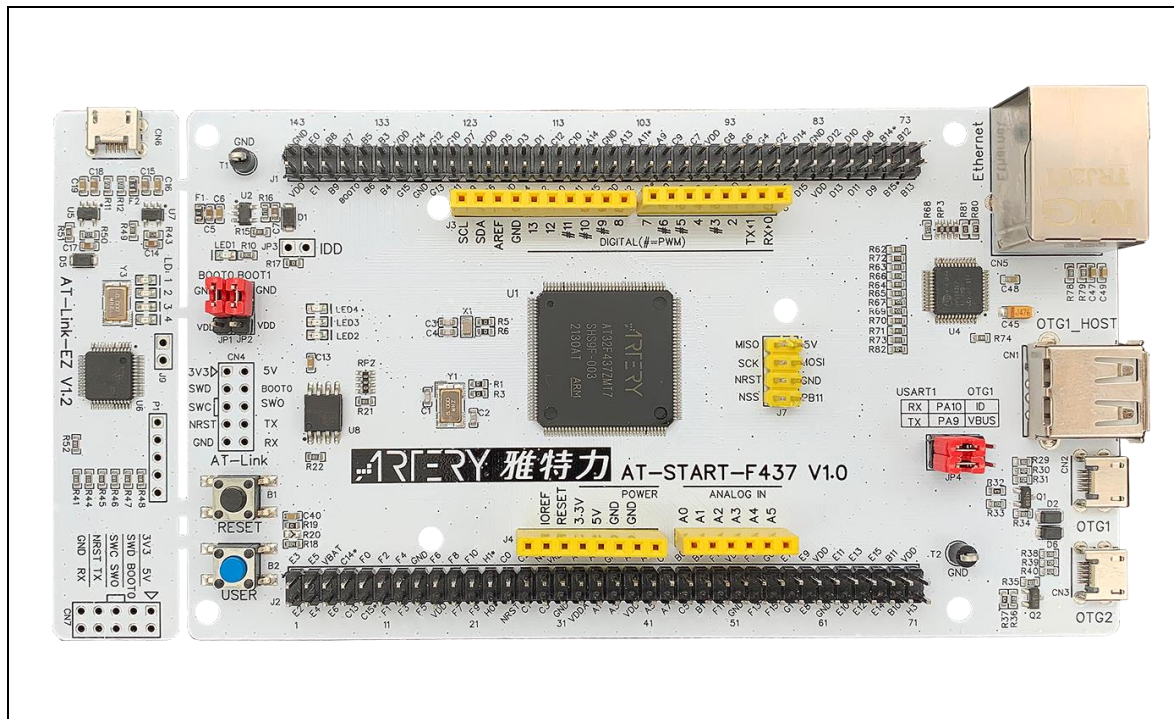
Peripherals	QSPI
	I ² C

1 Quick start

1.1 Hardware resources

- 1) AT-START-F437 V1.x evaluation board

Figure 1. AT-START-F437 V1.0 evaluation board



- 1) HUAXIA touch screen (LCD chip GC9B71, touch chip CST816D) and appropriate sockets (need to be purchased separately)

Figure 2. Touch screen



1.2 Software resources

- 1) This Demo is built upon AT32F437, and BSP version AT32F435_437_Firmware_Library_V2.1.2
- 2) QSPI drives LCD to demonstrate pre-defined pictures in order
- 3) I²C drives touch function. The screen is touchable and Graffiti-capable.

Note: All of projects are built based on Keil 5. For the need to run in other compiling environments, user can make simple adjustments according to AT32xxx_Firmware_Library_V2.x.x\project\at_start_xxx\templates.

1.3 Example case

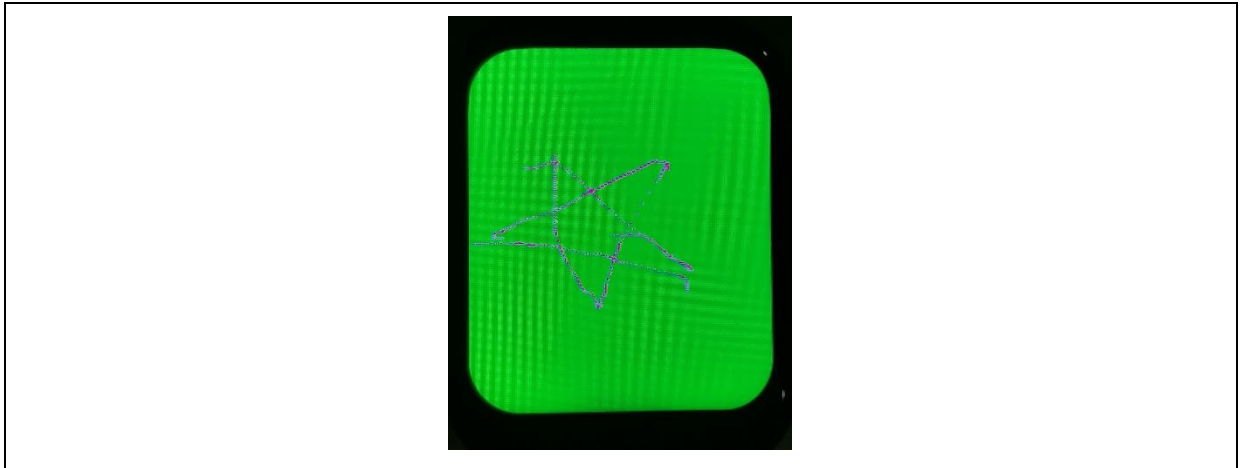
- 1) Connect LCD screen to AT-START evaluation board, according to readme.txt
- 2) Open SC0112_AT32F435_437_QSPI_LCD\SourceCode\utilities\qspi_lcd\mdk_v5 source code
- 3) Compile and download source code to the evaluation board. Now you can see that pictures are on display on LCD

Figure 3. Display pictures



- 4) After picture display, you can touch and draw on the screen.

Figure 4. Graffiti



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
2023.03.30	2.0.0	Initial release
2023.04.14	2.0.1	1. Updated the descriptions of section 1.3 source code 2. Changed the picture display coordinates in source code

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