4.3inch Capacitive Touch LCD User Manual

OVERVIEW

This is a multicolor graphic LCD display, 4.3inch diagonal, 800x480 pixels.

It is able to display 16,777,216 colors via the 24-bit RGB interface, supports up to 5-points capacitive touch control via I2C interface.

CONTENT

SPECIFICIATIONS

Working voltage :	3.3V/5V
LCD Interface :	24-bit RGB
Logic Level :	3.3V
LCD Type :	TFT
Display Colors :	16,777,216
Resolution :	800(H)RGB x 480(V)
Display Size :	95.04 (H) x 53.856 (V)mm
Dot Pitch :	0.1188(H) x 0.1122(V) mm
Touch controller :	GT911
Touch Interface :	I2C
Dimension :	106 x 68(mm)

INTERFACE

PIN	Description
5V	Power supply
IRQ	Interrupt (Touch)
SDA	I2C data pin (Touch)
NC	No connected
RST	Reset
SCL	I2C clock pin (Touch)
PWM	Backlight brightness adjustment
R0-R7	Data lines (Red)
G0-G7	Data lines (Green)
B0-B7	Data lines (Blue)
DISP	Brightness control enable (High active)
CLK	LCD clock
VSYNC	Horizontal synchronization
HSYNC	Vertical synchronization
DE	Control mode selection
GND	Ground

DEMO CODES

DOWNLOAD DEMO CODES.

Download demo codes from Waveshare wiki.

https://www.waveshare.com/wiki/4.3inch_Capacitive_Touch_LCD#Introduction

Unzip it:

STM32F429: Examples based on Open429I-C, whose chip is STM32F429IGT6. The project uses HAL libraries

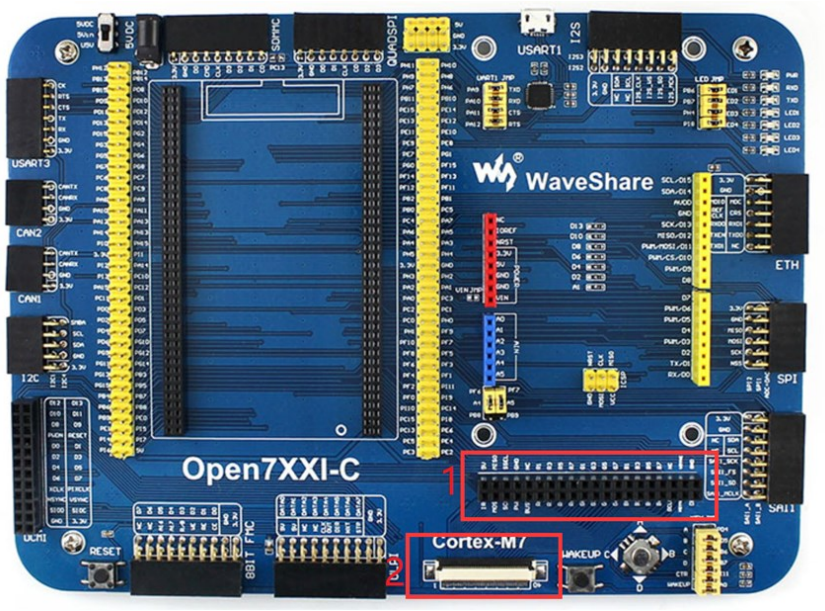
STM32F746:Examples based on Open746I-C, whose chip is STM32746IGT6. The project uses HAL libraries. With Open746I-C, both RGB Header interface and RGB Cable interface are compatible, so we provide two examples for both interfaces.

Clean.bat: Batch files sued to clean redundant files generated when compiling.

STM32F7 EXAMPLES

Development board used is Waveshare Open746I-C, chip is STM32F746IGT6. The project uses HAL libraries.

HARDWARE CONNECTION



For this board, we provide two examples, with same functions. The only difference of them is that the touch interface

RGB Header interface (Interface 1)

STM32	4.3INCH CAPACITIVE TOUCH LCD
5V	5V
IRQ	PD7
SDA	PF8
RST	PF6
SCL	PF7
PWM	PA3
R0	PH2
R1	PH3
R2	PH8
R3	PH9
R4	PH10
R5	PC0
R6	PB1
R7	PG6
G0	PE5
G1	PE6
G2	PH13
G3	PG10
G4	PH15
G5	PI0
G6	PI1
G7	PI2
B0	PE4

B1	PG12
B2	PD6
B3	PG11
B4	PI4
B5	PI5
B6	PI6
B7	PI7
DISP	No Connect (Or set it to High)
CLK	PG7
VSYNC	PI9
HSYNC	PI10
DE	PF10
GND	GND

RGB Cable interface (Interface 2), the only difference between Interface 1 is touch pins.

STM32	4.3inch Capacitive Touch LCD
SDA	PD13
RST	PD11
SCL	PD12

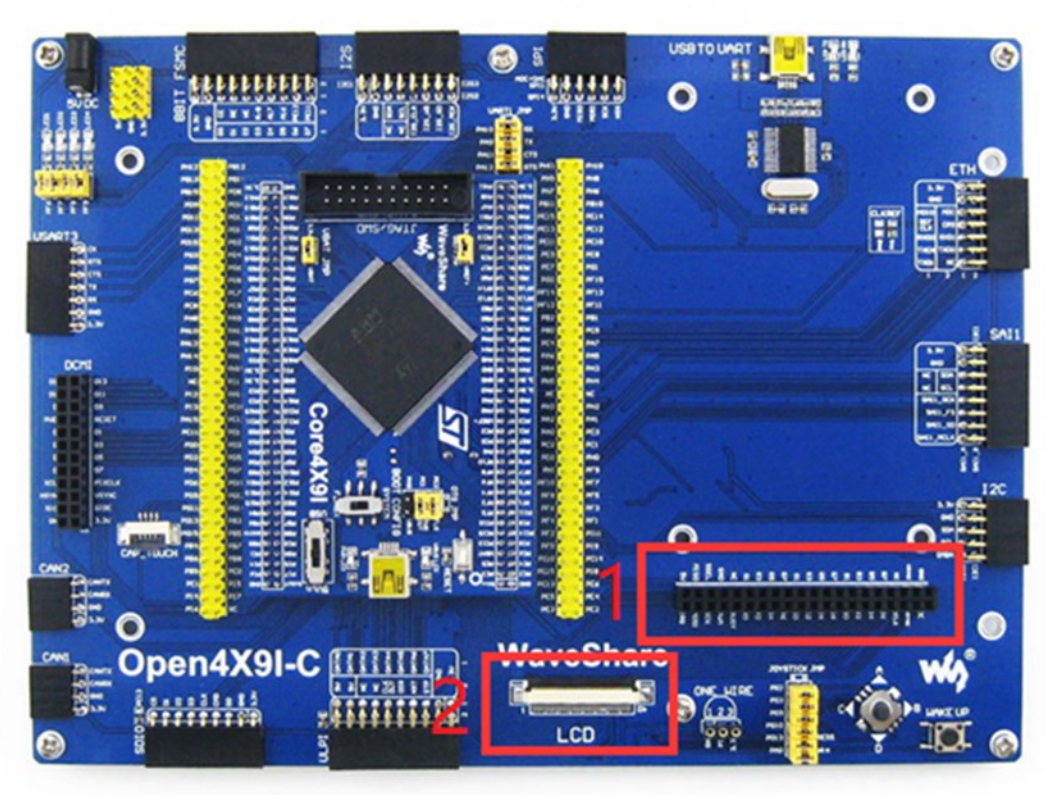
EXPECTED RESULT

1. Display a picture
2. Display English and Chinese characters
3. Draw point, line, rectangle and circle.
4. Display the points where finger touch, supports up to 5-points touch

STM32F4 EXAMPLES

Development board used is Waveshare Open429I-C, chip is STM32F429IGT6. The project uses HAL libraries.

HARDWARE CONNECTION



The RGB Cable interface (Interface 2) is used for resistive touch screen, isn't compatible with capacitive screen, therefore, we only provide RGB Header example (Interface 1) for this board.

RGB Header Interface (interface 1)

STM32	4.3inch Capacitive Touch LCD
5V	5V
IRQ	PE3
SDA	Pb14
RST	Pd5
SCL	Pb13
PWM	PD4
R0	pH2
R1	PH3
R2	pH8
R3	PH9
R4	PH10
R5	Ph11
R6	Ph12
R7	PG6
G0	PE5
G1	PE6
G2	PH13

G3	Ph14
G4	PH15
G5	PI0
G6	PI1
G7	PI2
B0	PE4
B1	PG12
B2	PD6
B3	PG11
B4	PI4
B5	PI5
B6	Pb8
B7	Pb9
DISP	No connect (or set it to High)
CLK	pg7
VSYNC	pi9
HSYNC	pi10
DE	pf10
GND	GND

EXPECTED RESULT

1. DISPLAY a picture
2. Display English and Chinese characters
3. Draw points, line, rectangle and circle
4. Display points touched by fingers, supports up to 5-points touch

FAQ

1. Why the codes used RGB565 instead of RGB888 for color displaying?

   - The data of RGB888 are too much, required much more RAM. SDRAM is 16-bit input/output. If we use RGB888, we should save RGB data by writing several times, and cost much more times and CPU. In fact, even we use RGB565 to transmit data, LCD controller will convert it to RGB888 format and needn't cost external CPU