1.54inch ink screen module

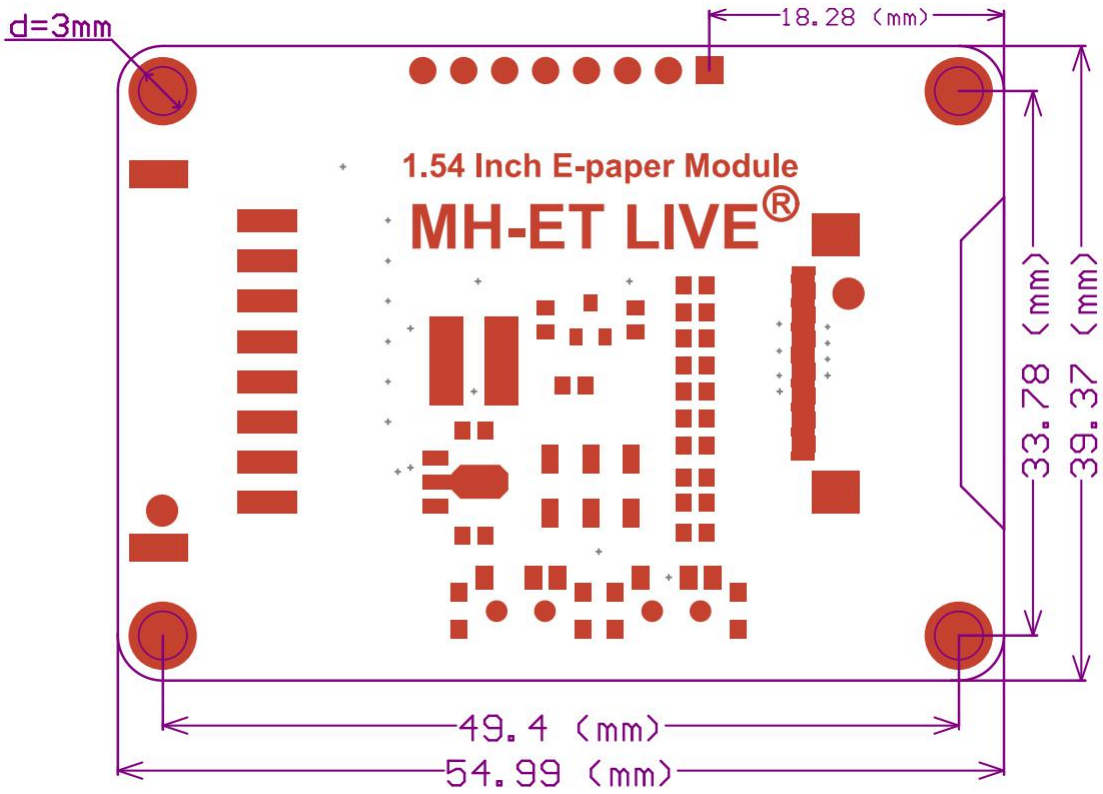
With shell

Features:

1. No need backlight, power off can keep the display content of the last screen for a long time, the time can be up to half a year
2. The power consumption is very low, basically only consumes power when refreshing
3. SPI control interface, can access Raspberry / Arduino / STM32 and other main control boards
4. Provide complete supporting materials (Arduino sample program, showing global display and partial display)

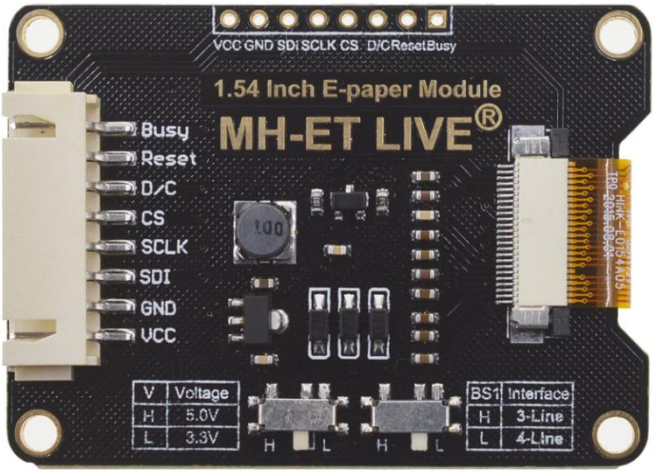
Parameter:

Operating voltage: 3.3V/5V (for Arduino access, no additional conversion level)
Communication interface: 3-wire SPI, 4-wire SPI optional
Dimensions: 55mm x 39.4mm
Display size: 27.6mm x 27.6mm
Dot Distance: 0.138 x 0.138
Resolution: 200 x 200
Display color: black, white
Gray level: 2
Partial refresh: 0.3s
Global refresh: 2s
Refresh power consumption: 26.4mW (typ.)
Standby power consumption: <0.017mW
Viewing angle: >170°



Interface Description:

VCC: 3.3V/5.0V, the input voltage can be selected by the switch
GND: GND
DIN: SPI communication MOSI pin, 4-wire or 3-wire SPI mode can be selected by switch
CLK: SPI communication SCK pin
CS: SPI Chip Select Pin (Active Low)
DC: Data/command control pin (high level means data, low level means command)
RST: External reset pin (low reset)
BUSY: Working status output pin (high level means working)



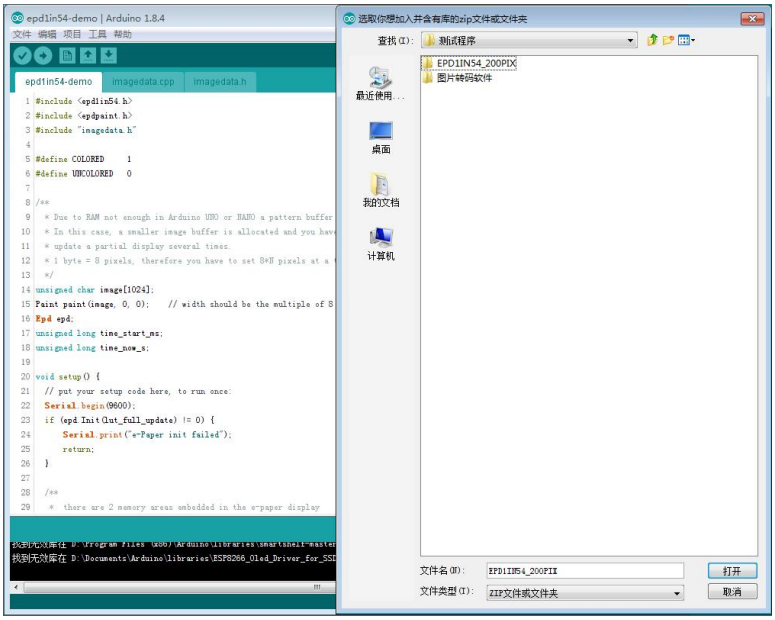
Connect with arduino

[Test example (supporting arduino program)]

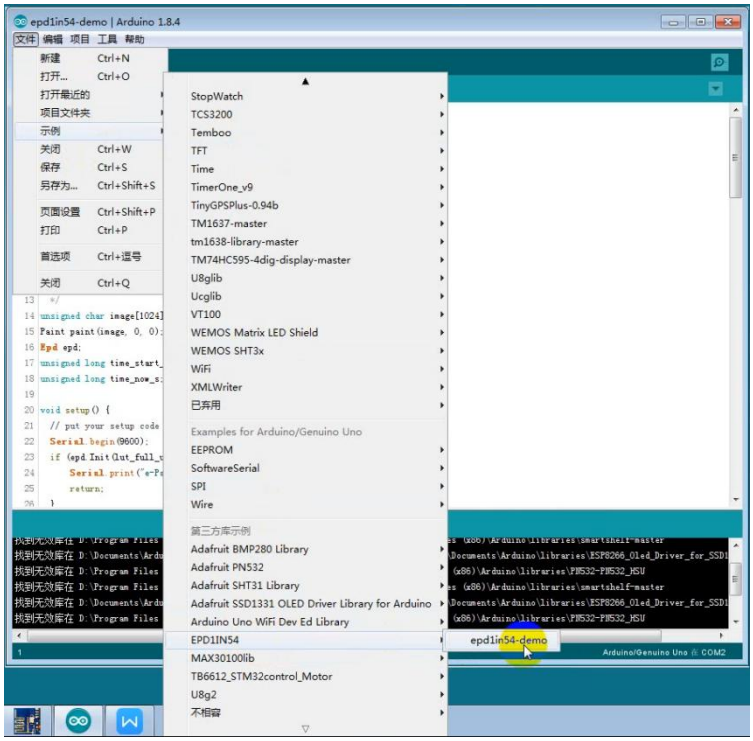
1, Import test program

Open the Arduino IDE, open the "Project" drop-down menu -> "Load Library" -> "Add a .ZIP Library"

Select EPD1IN54.zip or folder library file to add.



Open the "File" drop-down menu -> "Example", select the epd1in54-demo routine, compile and upload to the development board.



The development board and electronic paper display are connected as follows:

1.54 e-Paper	UNO /NANO V3.0/ PRO MINI /MEGA2560
5.0V	5.0V
GND	GND
DIN	D11
CLK	D13
CS	D10
DC	D9
RST	D8
BUSY	D7

Set the toggle switch to the correct gear position according to the supply voltage. The SPI interface uses a 4-wire interface by default.

The required function can be found from the library folder keywords.txt file.

2, Change display image

Indirect display of images: Use a computer to convert the image into a corresponding array, and then embed the array directly into the program as a .c file.

How to convert a picture into a corresponding array.

A. Open the drawing tool that comes with the Windows system, create a new picture, and set the pixel to 200x200.

B. Since the module can only display two levels of grayscale (only black and white), before converting the image into an array, it must be converted to a monochrome bitmap (File> Save> Save> BMP picture> Monochrome Bitmap). The sample package contains a monochrome bitmap image (raspberrypi/python/monocolor.bmp).

C. Use the Image2Lcd.exe software to generate an array (.c file) corresponding to the image.

- Use this software to open the picture and set the corresponding parameters:
- Output data type is: C language array
- Scan mode: horizontal scanning
- Output gray: monochrome (ie two-order)
- Maximum width and height: 200 and 200

• Do not check "Include image header data"

• Check "Color Flip" (check: white in the picture will be converted to 1, black will be converted to 0)

D. Click “Save” and the corresponding .c file will be generated.

E. Copy the corresponding array into the project, and the program calls this array to display it.

【Connect with **Raspberry Pi**】

e-Paper	Raspberry Pi 3B
3.3V	3.3V
GND	GND
SDIN	MOSI
SCLK	SCLK
CS	CE0
DC	25
RST	17
BUSY	24

【Connect with **STM32**】

e-Paper	STMF103C8T6
3.3V	3.3V
GND	GND
DIN	PB9
CLK	PB8
CS	PB7
DC	PB6
RST	PB5
BUSY	PB4