2.8" TFT Touch Shield with 4MB Flash for Arduino and mbed SKU:DFR0347

Introduction

The liquid crystal display module based on SPI communication interface, provide2.8 "TFT LCD, resistive touch screen, built-in Flash flash and SD card external expansion storage.This TFT panel connects directly on top of an Arduino pin compatible device.

Specification

- Model: DM-TFT28-105
- Display size: 2.8"
- Operating voltage: 3.3V or 5V
- Resolution ratio: 240x320
- Communication Interface: SPI
- Flash memory: 4MB
- Operating temperature: -10~70℃
- Support micro-SD card
- Support both Arduino and mbed
- Size: 55*70 (W*H)mm
- Viewing area：43.2*57.6 (W*H)mm
- Weight: 40g

Pinout

1.TFT, Touch, SD-card and external flash memory pin mapping:
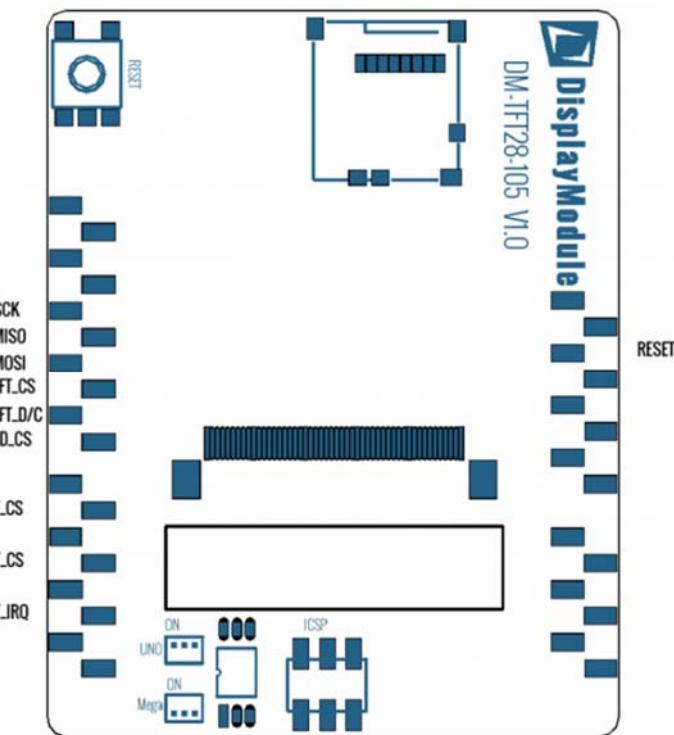
2.Pin Definitions:

Arduino Pin	Arduino Function	DM Function
Reset	Reset	Reset
5V	5V	5V
GND	GND	GND
GND	GND	GND
A0	A0	
A1	A1	
A2	A2	
A3	A3	
A4	A4	
A5	A5	

~ Support PWM

Arduino Pin	Arduino Function	DM Function
D13	SCK	CLK
D12	MISO	MISO
D11	MOSI ~	MOSI
D10	SS~	TFT_CS
D9		TFT_D/C
D8		SD_CS
D7		
D6	~	F_CS
D5	~	
D4		T_CS
D3	IRQ ~	
D2	IRQ	T_IRQ
D1	TX	
D0	RX	

Basic display Tutorial

Sample Example

1.First download our DmTftLibrary from dmtftlibrary
2.Extract the content to your Arduino library folder. In Windows this is usually located in Arduino IDE folder\libraries. Check Arduino's official guide if you want more information on how to install the Arduino Library.The official guide of Arduino
3.Start Arduino IDE, open the sample code, click "File--> Examples-> DmTftLibraries", select the right board and COM port: **DM-TFT28-105**
4.Open the Example and upload to your Arduino board.
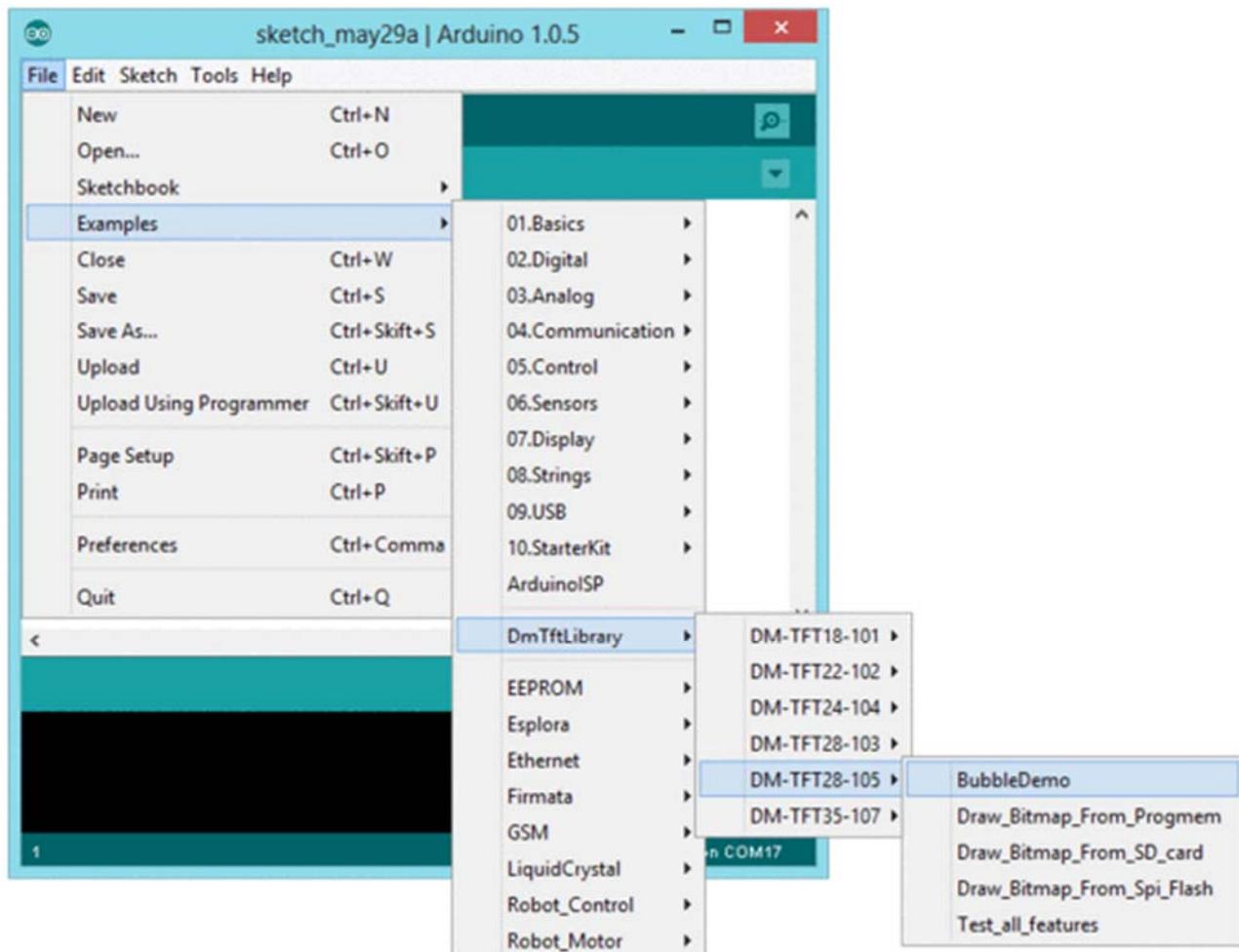
Display Sample Code

Basic function could be found from the library file <libraries\DmTftLibrary\DmTftBase.h>

```cpp
#include <SPI.h>
#include <DmTftIli9341.h>
DmTftIli9341 tft = DmTftIli9341(10, 9);// Define the function body
void setup ()
{
 tft.init();
 tft.drawString(5, 10,"  Romantic cabin");//Displays a string
 int x=100,y=100;
 tft.drawLine (x, y, x-80, y+30, YELLOW );//Draw line
 delay(1000);
 tft.drawLine (x, y, x+80, y+30, YELLOW );
 delay(1000);
 tft.drawLine (x-60, y+25, x-60, y+160, BLUE  );
 delay(1000);
 tft.drawLine (x+60, y+25, x+60, y+160, BLUE  );
 delay(1000);
 tft.drawLine (x-60, y+160, x+60, y+160,0x07e0  );
 delay(1000);
 tft.drawRectangle(x-40, y+50,x-20, y+70, 0x8418);//Draw rectangle
 delay(1000);
 tft.drawRectangle(x+40, y+50,x+20, y+70, 0x07ff);
 delay(1000);
 tft.fillRectangle(x-20, y+100, x+20, y+160, BRIGHT_RED);//Draw fill rectang
le
 delay(1000);
 tft.drawLine (x, y+100, x, y+160, WHITE  );
 delay(1000);
 tft.fillCircle(x+100, y-30, 20, RED );
 delay(1000);
}
void loop(){}
```
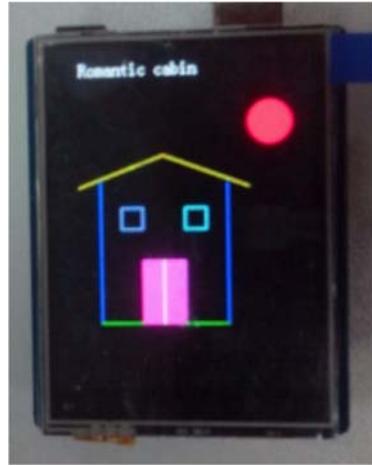
Touch screen Smaple code

```cpp
#include <SPI.h>

#include <DmTftIli9341.h>

#include <DmTouch.h>

#include <utility/DmTouchCalibration.h>

DmTftIli9341 tft = DmTftIli9341(10,9);

DmTouch dmTouch = DmTouch(DmTouch::DM_TFT28_105);

DmTouchCalibration calibration = DmTouchCalibration(&tft, &dmTouch);

bool calibrated = false;

uint16_t x=0, y=0 ;

void setup() {

  dmTouch.setCalibrationMatrix(calibration.getDefaultCalibrationData((int)DmTouch::DM_TFT28_105));

  tft.init();

  dmTouch.init();

}

void loop() {

  bool touched = true;

  if (dmTouch.isTouched()) {

    dmTouch.readTouchData(x,y,touched);//(x, y) coordinates read contacts

    calibration.drawCalibPoint(x, y);//In a display of contact

  }

}
```

Display a pictures from a SD card

Display a pictures from a SD card

It requires a special format for the displaying picture: **16bit RGBRGB bmp**
You could download the convert tool here：ImageConverter
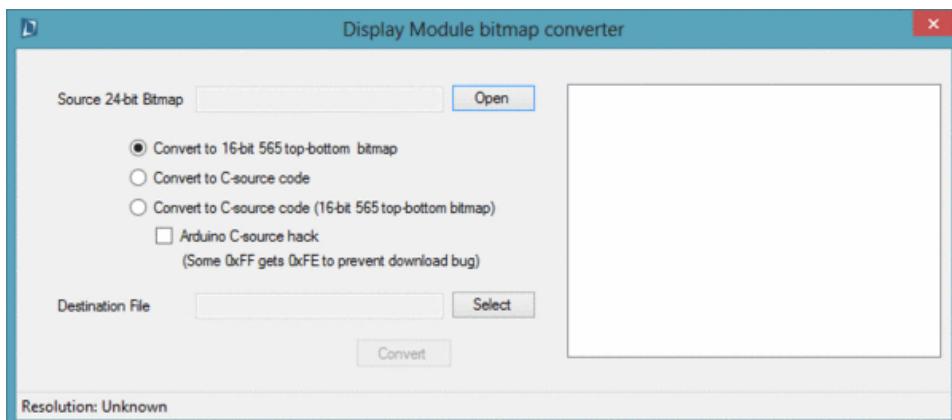
Anyway, there is converted picture in the library folder (DmTftLibrary\examples\DM-TFT28-105).
You could have a try with it first.

1.Copy the converted picture to the SD.
2.Plug SD card in the touch screen.
3.Download the following program

```
#include <SPI.h>

#include <SPIFlash.h>

#include <SD.h>
```

```cpp
#include <DmTftIli9341.h>
#include <DmDrawBmpFromSdCard.h>
#define TFT_CS  10
#define SD_CS   8
#define F_CS    6
#define T_CS    4
DmTftIli9341 tft = DmTftIli9341(10, 9);
DmDrawBmpFromSdCard drawImage = DmDrawBmpFromSdCard();
void setup()
{
  // Set CS SPI pin HIGH for all SPI units, so they don't interfere
  pinMode(TFT_CS, OUTPUT);
  digitalWrite(TFT_CS, HIGH);
  pinMode(T_CS, OUTPUT);
  digitalWrite(T_CS, HIGH);
  pinMode(SD_CS, OUTPUT);
  digitalWrite(SD_CS, HIGH);
  pinMode(F_CS, OUTPUT);
  digitalWrite(F_CS, HIGH);
  Serial.begin(9600);
  tft.init();
  SD.begin(SD_CS);
  drawImage.drawImage("logop565.bmp", tft, 0, 0);//Display picture
  tft.clearScreen();
  delay(2000);
  drawImage.drawImage("logop888.bmp", tft, 0, 0);
}
void loop() {
```