

DM-TFT28-116
2.8" TFT LCD DISPLAY MODULE WITH
CAPACITIVE TOUCH FOR ARDUINO
AND MBED WITH SPI, 4MB FLASH

Contents

[Revision history](#)

[Main features](#)

[Pin Layout](#)

[Pin function](#)

[Switch](#)

[Flash](#)

[Display specifications](#)

[Dimensions - Module Front](#)

[Dimensions - Module Back](#)

[Dimensions - Touch Panel](#)

[Electrical specifications](#)

[Absolute Maximum Ratings](#)

[Electrical Characteristics](#)

[Driving backlight](#)

[Optical Specifications](#)

1 Revision history

Date	Changes
2015-09-11	First release

2 Main features

Item	Specification	Unit
Screen Size	2.8	inch
Module Dimension	70.10x55.14	mm
Colors	262K	
Resolution	240x320	
Controller	Ilitek ILI9341	
Touch Controller	FT6206	
Touch Interface	I2C	
Display Interface	SPI	
microSD-card Interface	SPI	
Background LED	4 LED	
Flash	WinBond W25Q32BV	
Flash size	32 MegaBit (4 Megabyte)	

3 Pin Layout

This display uses a SPI interface for TFT, SD-card and 4MB flash memory. I2C interface for capacitive Touch.

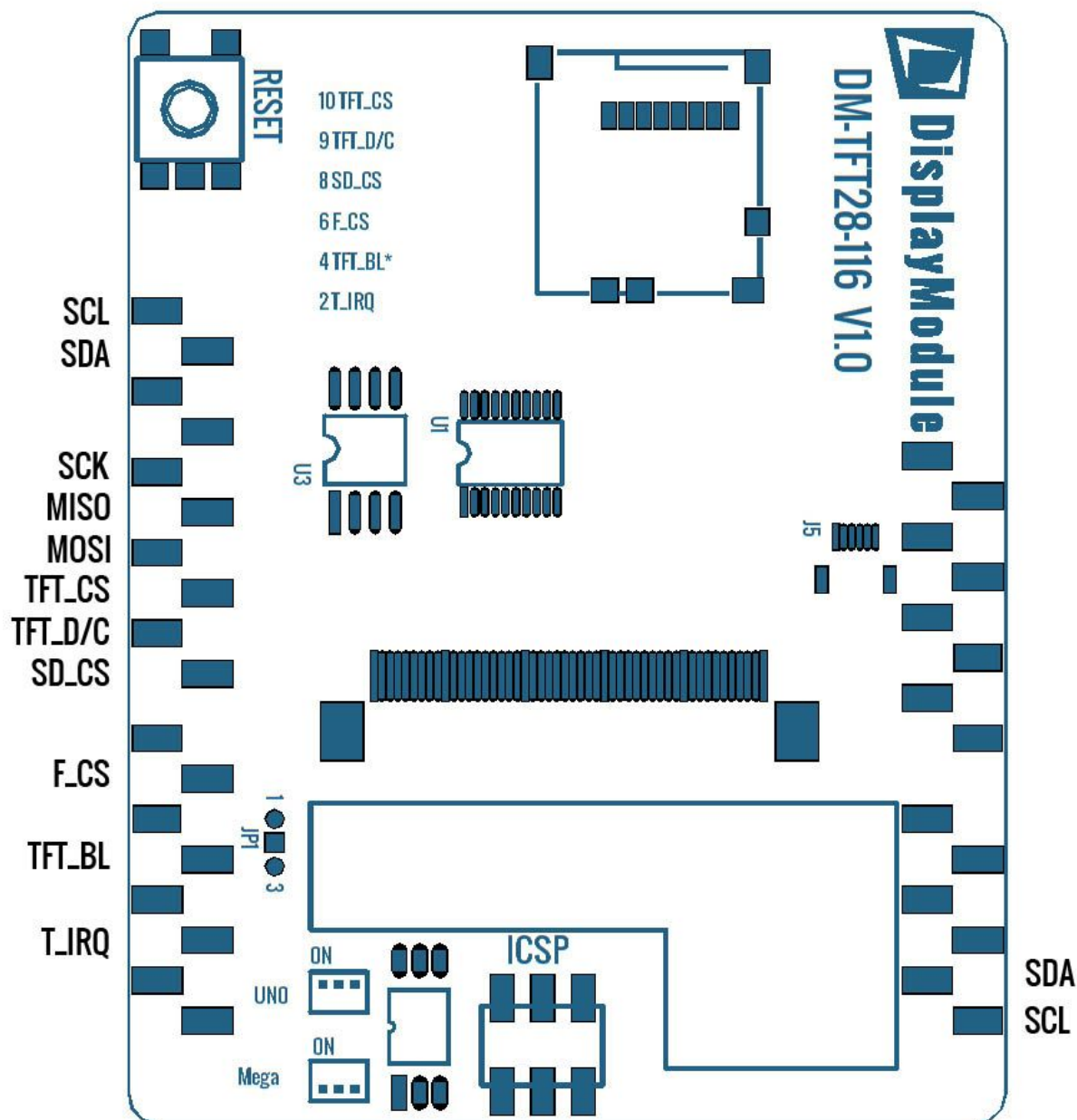


Figure 1: DM-TFT28-116 Pin Layout

3.1 Pin function

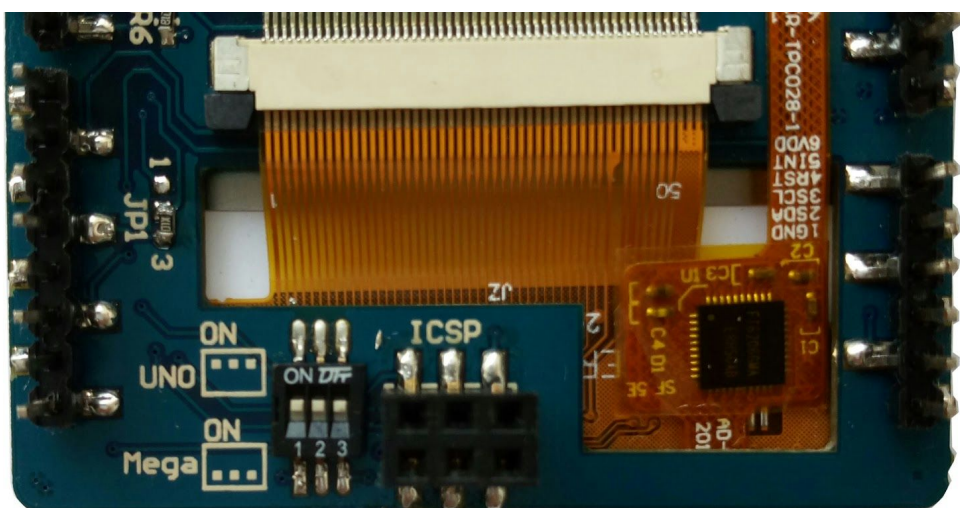
This TFT panel connects directly on top of an Arduino pin compatible device.

Arduino Pin	Arduino Function	DM Function		Arduino Pin	Arduino Function	DM Function
				D13	SCK	CLK
				D12	MISO	MISO
Reset	Reset	Reset		D11	MOSI	MOSI
				D10	SS	TFT_CS
5V	5V	5V		D9		TFT_D/C
GND	GND	GND		D8		SD_CS
GND	GND	GND		D7		
				D6		F_CS
A0	A0			D5		
A1	A1			D4		TFT_BL
A2	A2			D3		
A3	A3			D2		T_IRQ
A4	A4	SDA		D1	TX	
A5	A5	SCL		D0	RX	

Table 1: DM-TFT28-105 Pin Function

3.2 Switch

The backside of the screen has a switch which let you turn off access to SPI on pin 11,12 and 13. This is useful for Mega and all Mega compatible boards which does not have hardware SPI to pin 11,12 and 13.



4 Flash

The module has an onboard flash memory which can be used to store any data like images, fonts, calibration data, log files etc. basically similar files as are stored on the SD-card. It is not suitable to store program code on the flash.

The flash is connected through a single SPI connection using the same CLK, MOSI and MISO as the SD-card, Touch driver and the TFT. When initializing the hardware set all chipselect pins to high, F_CS, SD_CS and TFT_CS.

Flash	Specification
Manufacturer	WinBond
Chipset	W25Q32BV
Size	32 MegaBit (4 MegaByte)
Interface	Single SPI

5 Display specifications

5.1 Dimensions - Module Front

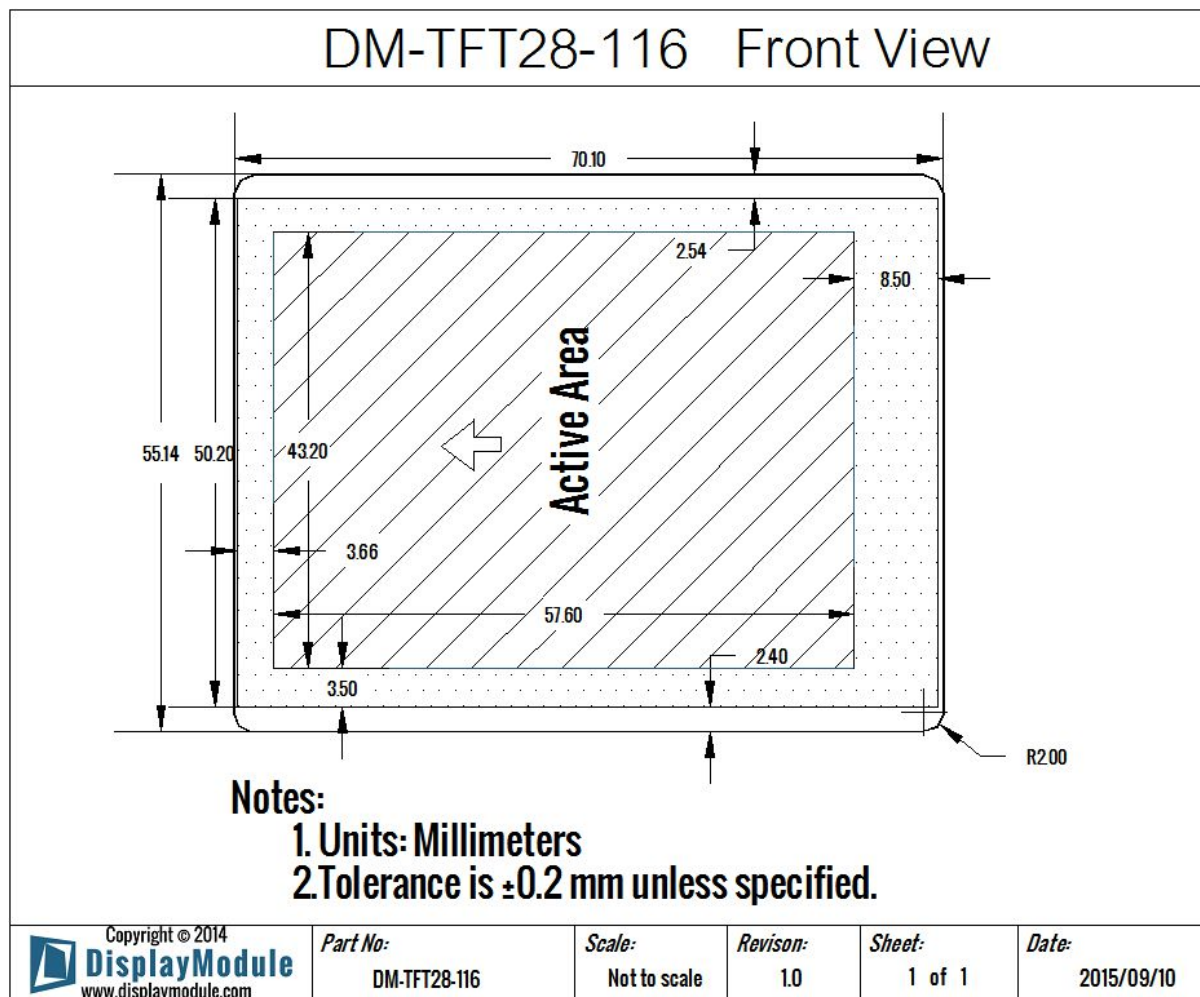


Figure 2: DM-TFT28-116 Front View

5.2 Dimensions - Module Back

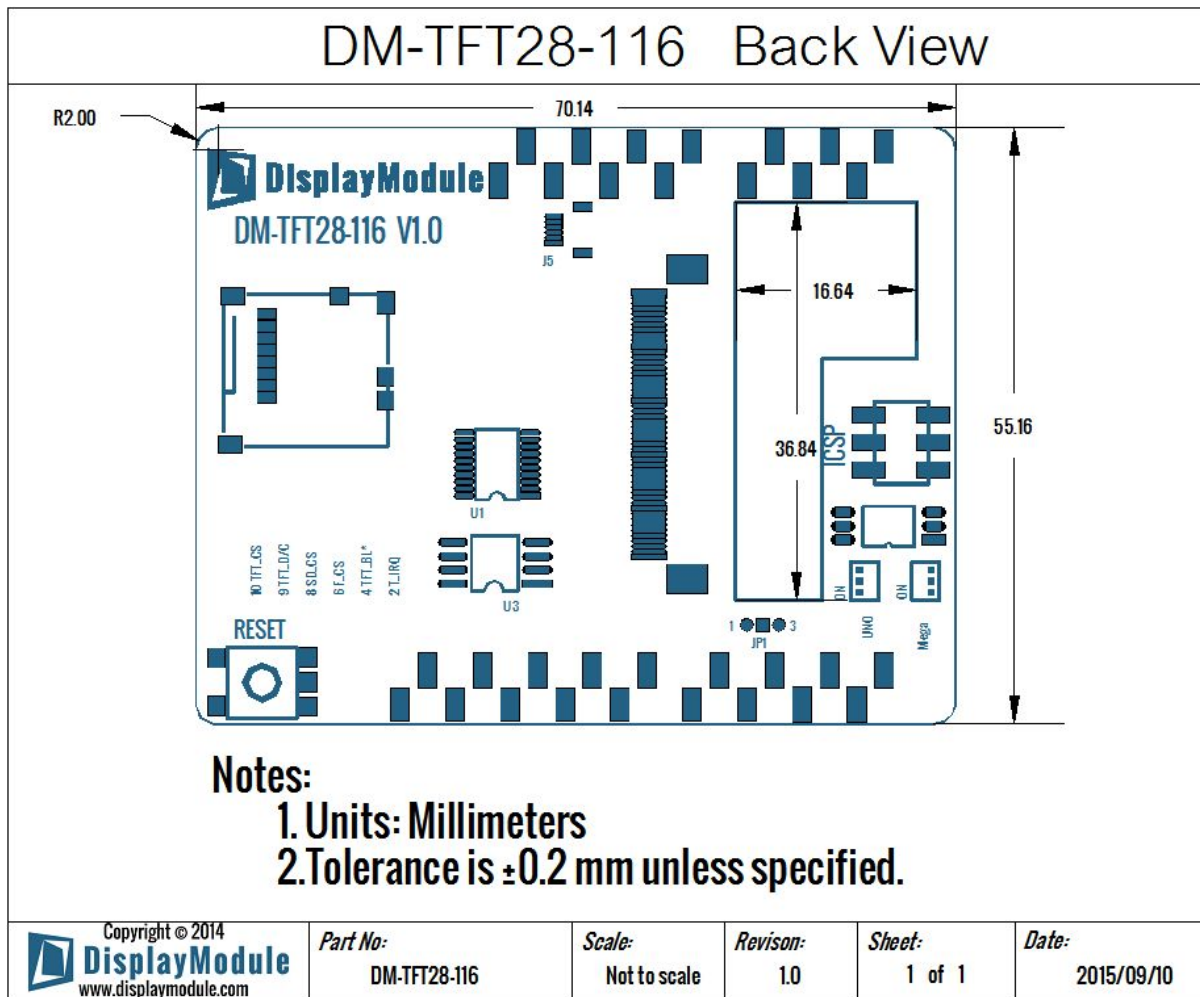
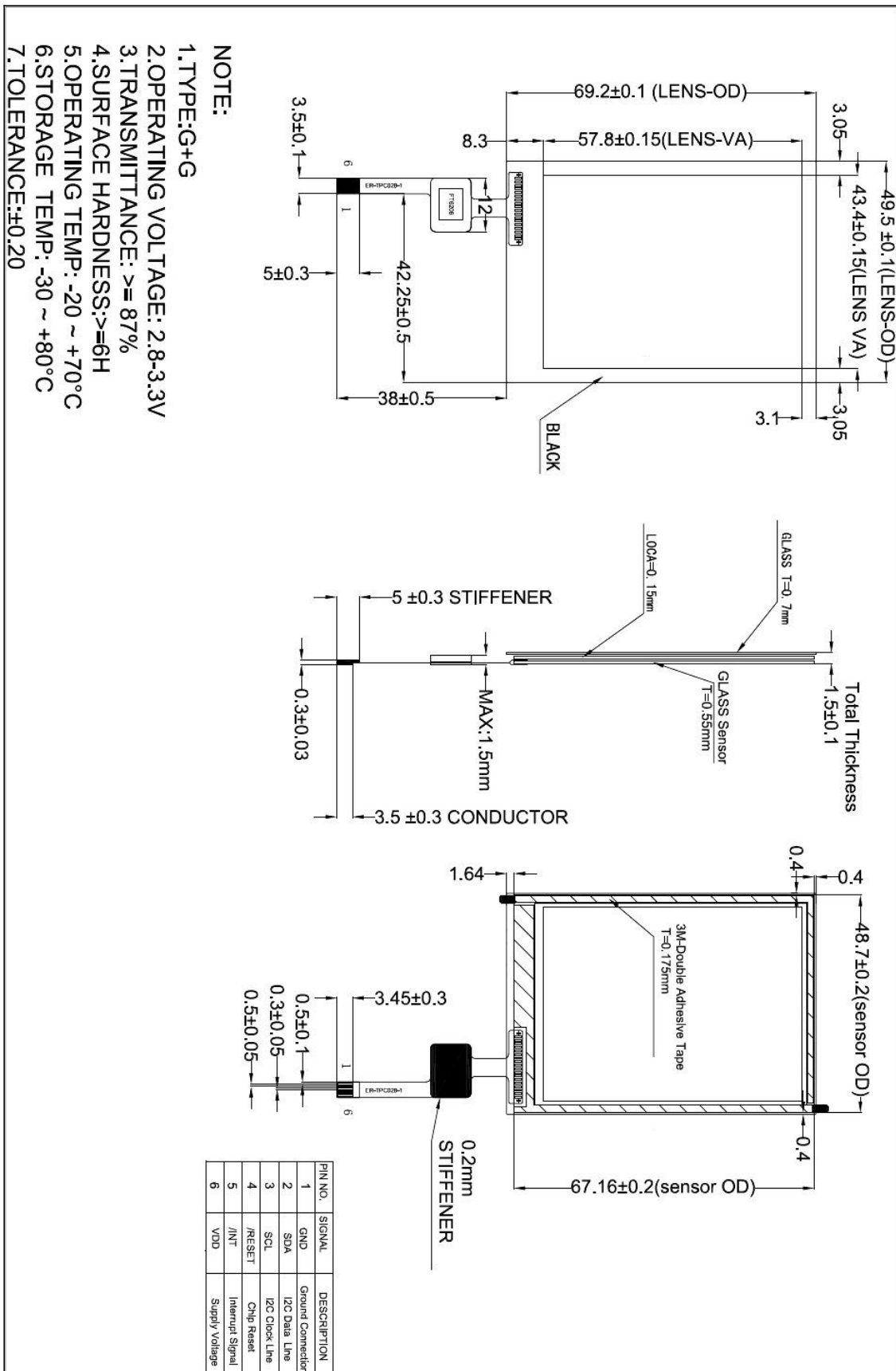


Figure 3: DM-TFT28-105 Back View

5.3 Dimensions - Touch Panel



6 Electrical specifications

6.1 Absolute Maximum Ratings

Item	Min	Max	Unit
Logic Signal Voltage	-0.3	5.5	V
Power Supply Voltage	-0.3	5.5	V
Input Voltage	-0.3	5.2	V
Backlight Forward Current		80	mA
Operating Temperature	-20	+70	°C
Storage Temperature	-30	+80	°C

6.2 Electrical Characteristics

Item	Min	Typ.	Max	Unit
Logic Signal Voltage	4.8	5.0	5.2	V
Power Supply Voltage	4.8	5.0	5.2	V
Input Voltage, Low	0	-	1.5	V
Input Signal Voltage, High	3.0	-	5.0	V
Power, Black	-	-	-	mW
Power, Standby mode	-	-	-	μW
Power, Sleeping mode	-	-	-	μW

*MOSI, MISO, CLK, TFT_CS, TFT_D/C, SD_CS, F_CS and T_IRQ

6.3 Driving backlight

Item	Max	Unit
Forward Current	20	mA each LED
Forward Voltage	3.4	V (4 LEDs in parallel)
Power Consumption	272	mW (4 LEDs in parallel)

7 Optical Specifications

Item	Min	Typ	Max	Unit
View Angles Top		70		°
View Angles Bottom		57		°
View Angles Left		70		°
View Angles Right		70		°
Contrast Ratio		500		
Response Time (25°C)		25		ms
Uniformity				%
NTSC				%
Luminance		240		cd/m ²