ER-AS-ILI9341

Arduino Shield Datasheet

EastRising Technology Co., Limited

Attention:

A. Some specifications of IC are not listed in this datasheet. Please refer to the IC datasheet for more details.

B. The related documents for interfacing, demo code, ic datasheet are all available, please download from our web.

C. Please pay more attention to “INSPECTION CRITERIA” in this datasheet. We assume you already agree with these criterions when you place an order with us. No more recommendations.

REV	DESCRIPTION	RELEASE DATE
1.0	Preliminary Release	Feb-24-2016

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1. ORDERING INFORMATION

1.1 Order Number:

Part Number(Order Number)	Description
ER-AS-ILI9341	Arduino Shield Designed for TFT LCD Display with ILI9341 Controller and Adaptor Board

1.2 What's included in the package:

No	Standard Accessory Name	Quantity
1	Arduino Shield	1

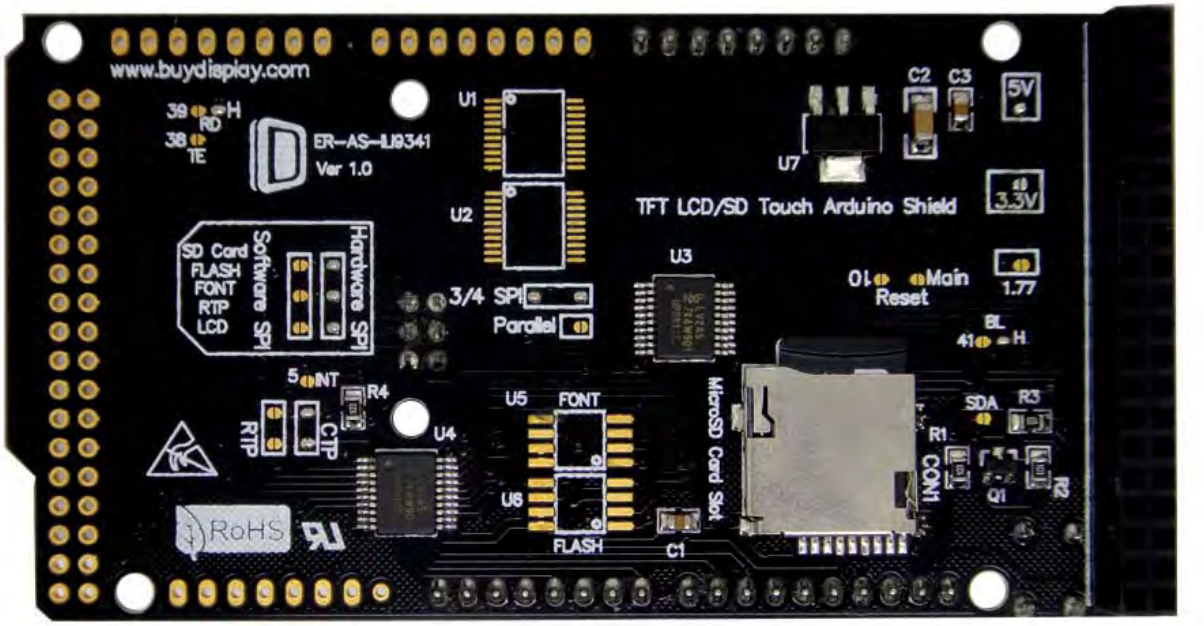
1.3 Compatible with Following TFT LCD Modules:

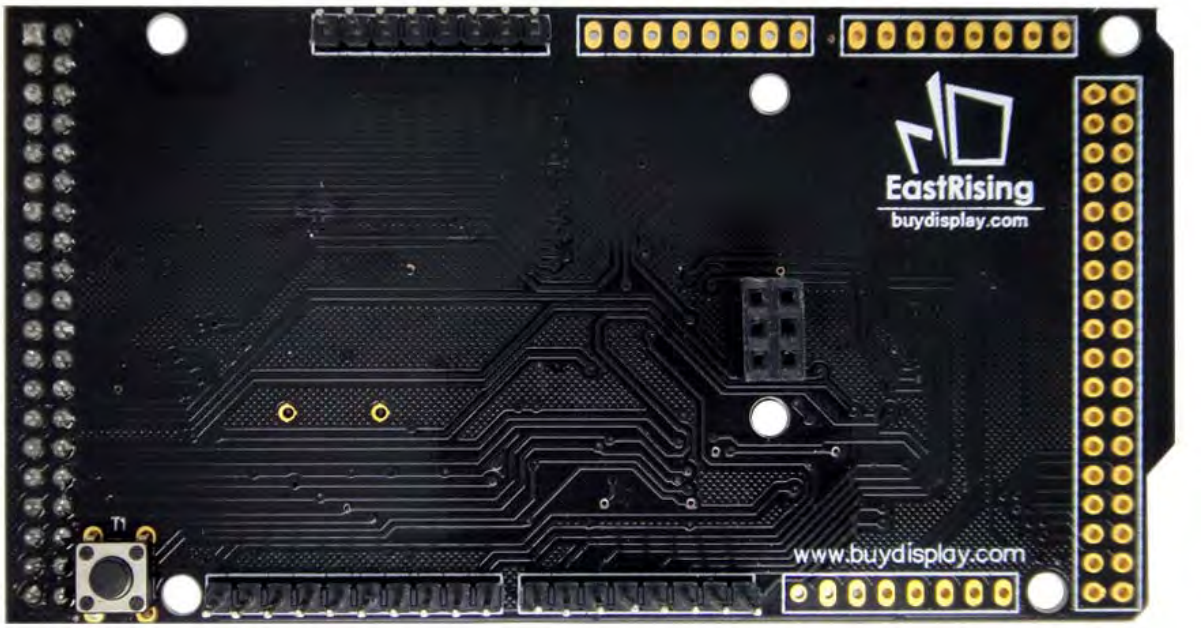
Part Number(Order Number)	Description
ER-TFTM014-1	1.4"TFT LCD Display with ST7735 Controller and Adaptor Board
ER-TFTM018-2	1.8"TFT LCD Display with ILI9163 Controller and Adaptor Board
ER-TFTM022-1	2.2"TFT LCD Display with ILI9341 Controller and Adaptor Board
ER-TFTM023-1	2.3"TFT LCD Display with ILI9341 Controller and Adaptor Board
ER-TFTM024-3	2.4"TFT LCD Display with ILI9341 Controller and Adaptor Board
ER-TFTM026-1	2.6"TFT LCD Display with ILI9341 Controller and Adaptor Board
ER-TFTM028-4	2.8"TFT LCD Display with ILI9341 Controller and Adaptor Board
ER-TFTM032-3	3.2"TFT LCD Display with ILI9341 Controller and Adaptor Board
ER-TFTM035-6	3.5"TFT LCD Display with ILI9488 Controller and Adaptor Board

1.4 Compatible with Following Arduino Board:

Board Name	MCU	I/O
Arduino MEGA2560	ATMEGA2560	54
Arduino MEGA1280	ATMEGA1280	54
Arduino Due	AT91SAM3X8EA	54
Arduino UNO	ATMEGA328	14

1.5 Image


www.buydisplay.com
ER-AS-ILI9341
Ver 1.0
TFT LCD/SD Touch Arduino Shield
SD Card
FLASH
FONT
RTP
LCD
Software SPI
Hardware SPI
3/4 SPI
Parallel
Main
Reset
1.77
5V
3.3V
MicroSD Card Slot
FONT
FLASH
RTP
CTP
SDA
RoHS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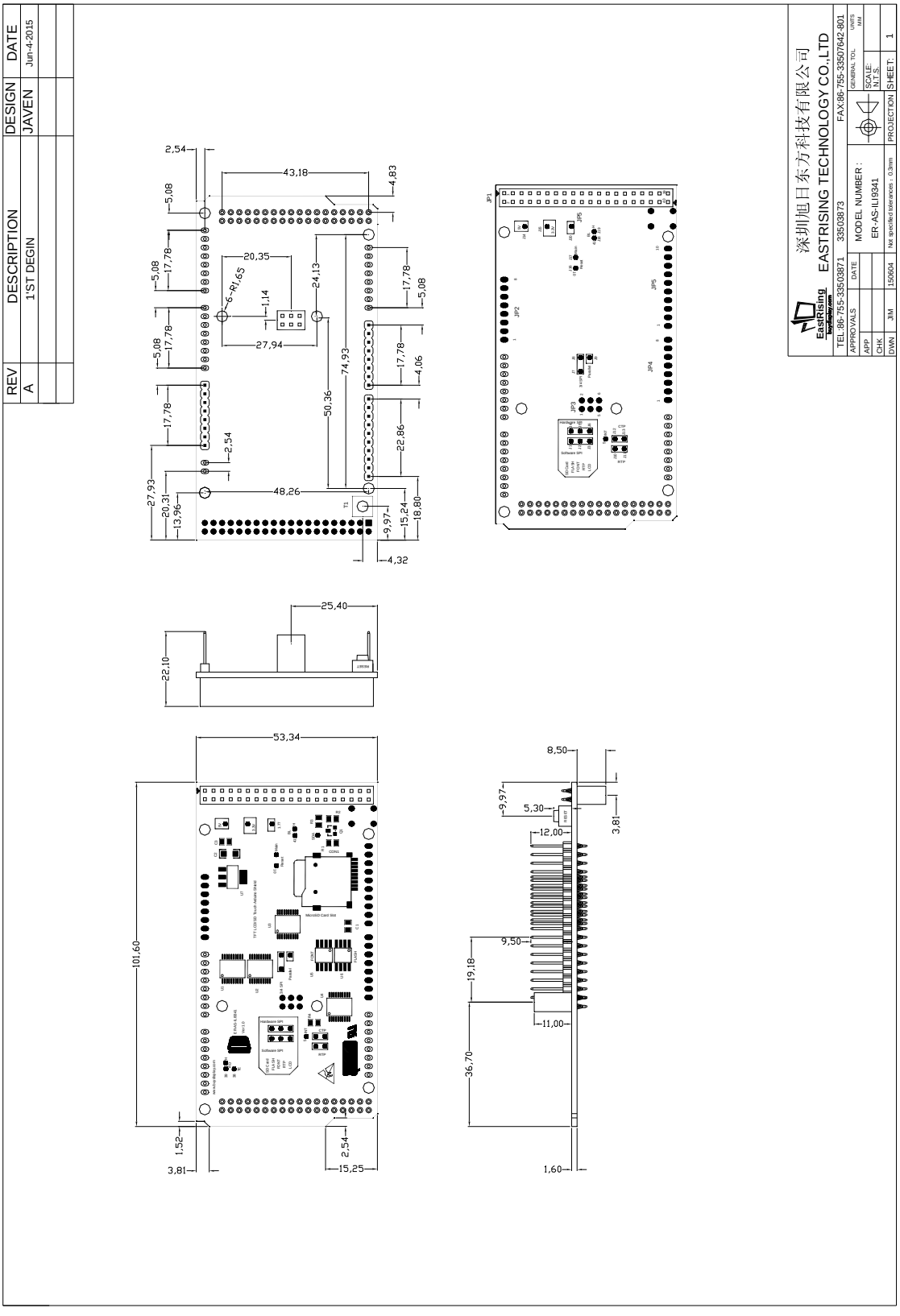
2. OUTLINE DRAWING .



3.INTERFACE DESCRIPTION

3.1 JP1-TFT LCD Module Input Interface

Pin No	Symbol	Descriptions
1	VSS	Ground
2	VDD	Power Supply
3-18	DB0-DB6	16-Bit Parallel Bi-Directional Data Bus. No connection when not in use
19,20	NC	No Connect
21	/RESET_NC	Master Synchronizes Reset, Active Low. RC reset on board.
22	NC	No Connect
23	LCD_/CS	LCD chip select input pin (“Low” Enable).
24	D/C(SCL)	This pin is used to select “Data or Command” in the parallel interface When DCX = ’1’, data is selected. When DCX = ’0’, command is selected. This pin is used for serial interface clock in 3-wire 9-bit / 4-wire 8-bit serial data interface. No connection when not in use.
25	/WR(D/C)	Parallel Interface: Serves as a write signal and writes data at the rising edge. 4-Wire Interface: Serves as command or parameter select. No connection when not in use
26	/RD	Parallel Interface: Serves as a read signal and MCU read data at the rising edge. No connection when not in use
27	LCD_SDI	Serial Interface I: Serial in/out signal. Serial Interface II: High, Serial input signal. The data is applied on the rising edge of the SCL signal. No connection when not in use
28	LCD_SDO	Serial output signal. The data is outputted on the falling edge of the SCL signal. No connection when not in use
29	BL_ON/OFF	Backlight Control Input. Low: OFF High: ON
30	RTP_/CS	Resistive Touch Screen: Chip Select Input Pin (“Low” Enable).
	CTP_SCL	Capacitive Touch Screen: Serial Clock Input (I2C)
31	RTP_PEN	Resistive Touch Screen: Chip Select Input Pin (“Low” Enable).
	CTN_SDA	Capacitive Touch Screen; Serial Data Input/Output (I2C)

32	SDO	Serial Signal Output. (RTP,SD,FLASH,FONT)
33	SCL	Serial Clock Signal Input (RTP,SD CARD,FLASH,FONT)
34	SDI	Serial Signal Input. (RTP,SD CARD,FLASH,FONT)
35	SD_/CS	SD Card Chip Select Input Pin (“Low” Enable).
36	FONT_/CS	Font Chip Select Input Pin (“Low” Enable).
37	FLASH_/CS	Flash Memory Chip Select Input Pin (“Low” Enable).
38	FLASH_/WP	Write Protect Input. Low Active.
39	FLASH_/HOLD	Flash Hold Input. Low Active.
	CTP_INT	Capacitive Touch Screen the Interrupt Signal. Low Active.
40	VSS	Ground

Note :CTP is the short for Capacitive Touch Panel. RTP is the short for 4-wire Resistive Touch Panel.

3.2 JP2-Arduino Board Output Interface

No	Symbol	Descriptions
1	NC	No connect
2	VSS	Ground
3	VSS	Ground
4	+5v	+5V Power
5	+3.3V	+3.3V Power
6	/RESET	Master Reset
7	VSS	Ground
8	VSS	Ground

3.3 JP3-Arduino Board Output Interface

No	Symbol	Descriptions
1	VSS	Ground
2	NC	No connect
3	MOSI	SPI Master Output/Slave Input
4	SCLK	Serial clock
5	+5V	+3.3V Power
6	MISO	SPI Master Input/Slave Output

3.4 JP4-Arduino Board Output Interface

No	Symbol	Descriptions
1	FLASH_CS(IO0)	LCD Reset, Active Low. Arduino Board Digital IO 0
2	FONT_CS(IO1)	LCD Chip Select Signal. Low Active. Arduino Board Digital IO 1
3	SCLK(IO2) (LCD SD card, RTP,Flash,Font Chip)	Serial Clock Signal, Arduino Board digital IO 2 (Software SPI)
4	DIN(IO3) (LCD,SD card, RTP,Flash,Font Chip)	Serial Data Input, Arduino Board Digital IO 3 (Software SPI)
5	Dout(IO4) (LCD,SD card, RTP,Flash,Font Chip)	Serial Data Output, Arduino Board Digital IO 4 (Software SPI)
6	RTP_PEN(IO5)	Resistive TouchScreen Pen Interrupt, Arduino Board Digital IO 5
	CTP_INT(IO6)	Capacitive Touch Screen Interrupt Signal. Arduino Board Digital IO 5
7	RTP_CS	Resistive Touch Screen Chip Select , Arduino Board Digital IO IO6
8	WR_DC	Parallel:Write Signal.Serial Command or Parameter Select. Arduino Board Digital IO IO7

3.5 JP5-Arduino Board Output Interface

No	Symbol	Descriptions
1	SD_CS(IO8)	SD Card Chip Select Signal, Arduino Board Digital IO 8
2	LCD_/CS(IO9)	Chip Select Signal, Arduino Board Digital IO 9
3	/RESET(IO10)	LCD Reset Signal, Arduino Board Digital IO 10
4	NC	No Connect
5	NC	No Connect
6	NC	No Connect
7	VSS	Ground
8	NC	No Connect
9	SDA1	Hardware I2C Serial Data Input/Output
10	SCL1	Hardware I2C Serial Clock

3.6 Jump Point Description

Function Description	Jump Method
RTP,Flash,Font IC,SD Card Interface by Software SPI	J1,J2,J3 Short and J4,J5,J16 Open
RTP,Flash,Font IC,SD Card Interface by Hardware SPI	J4,J5,J16 Short and J1,J2,J3 Open
3-wire or 4-wire SPI Interface	J7,J8 short and J9 open
Parallel Interface	J9 short and J7,J8 open
Capacitive Touch Panel	J12,J13 short and J10,J11 open
Resistive Touch Panel	J10,J11 short and J12,J13 open
3.3V Power Supply	J15 short and J14 open
5.0V Power Supply	J14 short and J15 open
Reset Connection to IO10	J16 short and J17 open
Reset Connection to Arduino Reset	J17 short and J16 open

4. CARE AND HANDLING PRECAUTIONS

The kit is sold with a module mounted on it. If you attempt to modify the board to work with other modules, the warranty is void. For optimum operation of the module and demonstration board and to prolong their life, please follow the precautions below.

4.1 ESD (Electro-Static Discharge)

The circuitry is industry standard CMOS logic and susceptible to ESD damage. Please use industry standard antistatic precautions as you would for any other PCB such as expansion cards or motherboards.

4.2 Avoid Shock,Impact,Torque and Tension

◇ Do not expose the module to strong mechanical shock, impact, torque, and tension.
◇ Do not drop, toss, bend, or twist the module.
◇ Do not place weight or pressure on the module.

4.3 LCD&OLED Display Glass

◇ The exposed surface of the LCD "glass" is actually a polarizer laminated on top of the glass.To protect the soft plastic polarizer from damage, the module ships with a protective film over the polarizer. Please peel off the protective film slowly. Peeling off the protective film abruptly may generate static electricity.

◇ The polarizer is made out of soft plastic and is easily scratched or damaged. When handling the module, avoid touching the polarizer. Finger oils are difficult to remove.

◇ If the LCD panel breaks, be careful not to get the liquid crystal fluid in your mouth or eyes. If the liquid crystal fluid touches your skin, clothes, or work surface, wash it off immediately using soap and plenty of water.

◇ Be very careful when you clean the polarizer. Do not clean the polarizer with liquids. Do not wipe the polarizer with any type of cloth or swab (for example, Q-tips). Use the removable protective film to remove smudges (for example, fingerprints) and any foreign matter. If you no longer have the protective film, use standard transparent office tape . If the polarizer is dusty, you may carefully blow it off with clean, dry, oil-free compressed air.

4.4 Operation

◇ Use only the included AC adapter to power the board.

◇ Observe the operating temperature limitations: from -20°C minimum to +70°C maximum with minimal fluctuations. Operation outside of these limits may shorten the life and/or harm the display.

☐ At lower temperatures of this range, response time is delayed.

☐ At higher temperatures of this range, display becomes dark. (You may need to adjust the contrast.)

◇ Operate away from dust, moisture, and direct sunlight.

4.5 Storage and Recycling

◇ Store in an ESD-approved container away from dust, moisture, and direct sunlight.

◇ Observe the storage temperature limitations: from -30°C minimum to +80°C maximum with minimal fluctuations. Rapid temperature changes can cause moisture to form, resulting in permanent damage.

◇ Do not allow weight to be placed on the modules while they are in storage.

◇ Please recycle your outdated displays at an approved facility.

That's the end of the datasheet.