Winstar Display Co., LTD
華凌光電股份有限公司
WEB: https://www.winstar.com.tw E-mail: sales@winstar.com.tw

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF70-1024600A7L#A03-FC

APPROVED BY: **(FOR CUSTOMER USE ONLY)**	**PCB VERSION:** **DATA:**

SALES BY	**APPROVED BY**	**CHECKED BY**	**PREPARED BY**
first FC components			葉虹蘭
ISSUED DATE: **2021/04/19**			

TFT Display Inspection Specification: https://www.winstar.com.tw/technology/download.html
Precaution in use of TFT module: https://www.winstar.com.tw/technology/download/declaration.html

General Specifications

Item	Dimension	Unit
Size	7.0	inch
Dot Matrix	1024 x RGBx600(TFT)	dots
Module dimension	164.8(W) x 99.8(H) x 7.35(D)	mm
Active area	154.2144 x 85.92	mm
Pixel pitch	0.1506 x 0.1432	mm
LCD type	TFT, Normally White, Transmissive	
View Direction	12 o'clock	
Gray Scale Inversion Direction	6 o'clock	
Aspect Ratio	16:9	
TFT Driver IC	EK79001HE + EK73215BCGA	
TFT Interface	LVDS	
Backlight Type	LED, Normally White	
CTP IC	ILI2130 or Equivalent	
CTP Interface	I2C	
CTP FW Version	0x07.0x00.0x00.0x00.0x65.0x90.0x00.0x01	
CTP Resolution	16384*16384	
With /Without TP	With CTP	
Surface	Glare	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+80	℃

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

Electrical Characteristics

5.1. Typical Operation Conditions

(Note 1)

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Power voltage	DVDD	3.0	3.3	3.6	V	Note 2
	AVDD	9.4	9.6	9.8	V	
	VGH	17	18	19	V	
	VGL	-6.6	-6.0	-5.4	V	
Supply CTP	VDDT	3.0	3.3	3.6	V	
	I_{CTP}	—	65	98	mA	
Input signal voltage	VCOM	3.1	3.3	3.6	V	
Input logic high voltage	VIH	0.7 DVDD	-	DVDD	V	Note 3
Input logic low voltage	VIL	0	-	0.3 DVDD	V	

Note 1: Be sure to apply DVDD and VGL to the LCD first, and then apply VGH.
Note 2:.DVDD setting should match the signals output voltage (refer to Note 3) of customer's system board.
Note 3: DCLK,HS,VS,RESET,U/D,L/R,DE,R0~R7,G0~G7,B0~B7,MODE,DITHB.

5.2. Current Consumption

Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Current for Driver	IGH	-	0.2	1.0	mA	VGH =18.0V
	IGL	-	0.2	1.0	mA	VGL = -6.0V
	IDVDD	-	4.0	10	mA	DVDD =3.3V
	IAVDD	-	20	50	mA	AVDD =9.6V

Interface

LCM PIN Definition

FPC Connector is used for the module electronics interface. The recommended model is FH12A-40S-0.5SH manufactured by Hirose.

Pin No.	Symbol	I/O	Function	Remark
1	VCOM	P	Common Voltage	
2	VDD	P	Digital circuit	
3	VDD	P	Digital circuit	
4	NC	---	No connection	
5	Reset	I	Global reset pin	
6	STBYB	I	Standby mode, Normally pulled high STBYB = “1”, normal operation STBYB = “0”, timing controller, source driver will turn off, all output are High-Z	
7	GND	P	Ground	
8	RXIN0-	I	Negative LVDS differential data input	
9	RXIN0+	I	Positive LVDS differential data input	
10	GND	P	Ground	
11	RXIN1-	I	Negative LVDS differential data input	
12	RXIN1+	I	Positive LVDS differential data input	
13	GND	P	Ground	
14	RXIN2-	I	Negative LVDS differential data input	
15	RXIN2+	I	Positive LVDS differential data input	
16	GND	P	Ground	
17	RXCLKIN-	I	Negative LVDS differential clock input	
18	RXCLKIN+	I	Positive LVDS differential clock input	
19	GND	P	Ground	
20	RXIN3-	I	Negative LVDS differential data input	
21	RXIN3+	I	Positive LVDS differential data input	
22	GND	P	Ground	
23	NC	---	No connection	
24	NC	---	No connection	
25	GND	P	Ground	
26	NC	---	No connection	
27	DIMO	O	Backlight CABC controller signal output	
28	SELB	I	6bit/8bit mode select H:6bit / L:8bit	

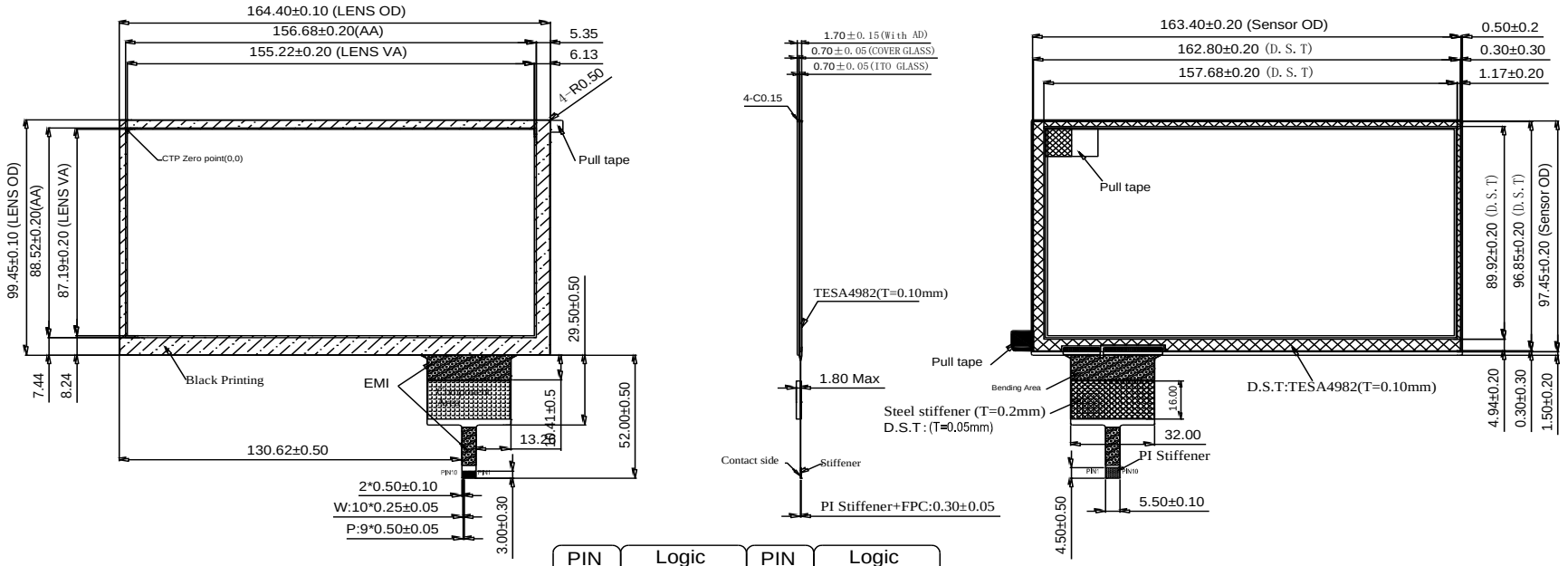
29	AVDD	P	Power for Analog Circuit	
30	GND	P	Ground	
31	LED-	P	LED Cathode	
32	LED-	P	LED Cathode	
33	L/R	I	Horizontal inversion	
34	U/D	I	Vertical inversion	
35	VGL	P	Negative power for TFT	
36	GND	P	Ground	
37	GND	P	Ground	
38	VGH	P	Positive power for TFT	
39	LED+	P	LED Anode	
40	LED+	P	LED Anode	

I:input ,O:output,P:power
Note
When L/R=”0”,set right to left scan direction.
When L/R=”1”,set left to right scan direction.
When U/D=”0”,set top to bottom scan direction.
When U/D=”1”,set bottom to top scan direction.

CTP PIN Definition

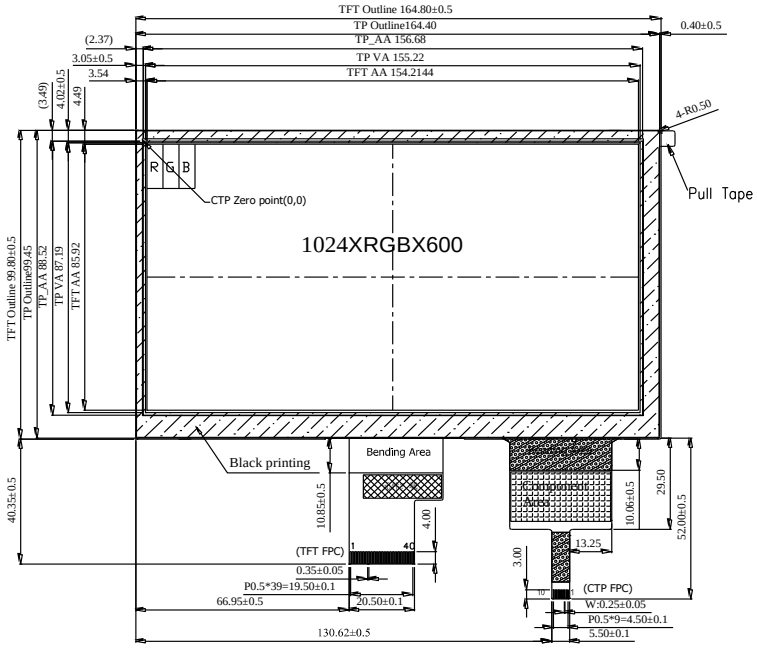
Pin	Symbol	Function	Remark
1	VSS	Ground for analog circuit	
2	VDDT	Power Supply : +3.3V	
3	SCL	I2C clock inputI2C clock input	
4	NC	No connect	
5	SDA	I2C data input and output	
6	NC	No connect	
7	/RST	External Reset, Low is active	
8	NC	No connect	
9	/INT	External interrupt to the host	
10	VSS	Ground for analog circuit	

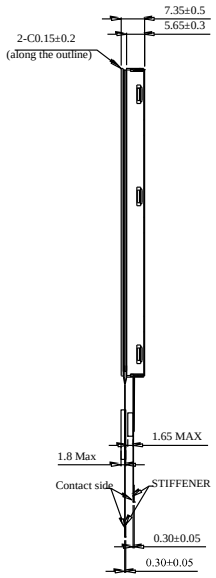
Touch Panel Information

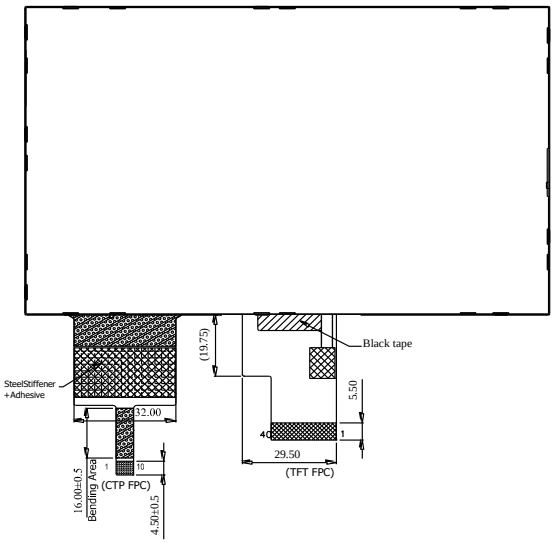


PIN	Logic	PIN	Logic
1	VSS	6	NC
2	VDDT	7	/RST
3	SCL	8	NC
4	NC	9	/INT
5	SDA	10	VSS

Contour Drawing







CTP

PIN NO.	SYMBOL
1	VSS
2	VDDT
3	SCL
4	NC
5	SDA
6	NC
7	/RST
8	NC
9	/INT
10	VSS

TFT

PIN NO	SYMBOL
1	VCOM
2	VDD
3	VDD
4	NC
5	REST
6	STBYB
7	GND
8	RXIN0-
9	RXIN0+
10	GND
11	RXIN1-
12	RXIN1+
13	GND
14	RXIN2-
15	RXIN2+
16	GND
17	RXCLKIN-
18	RXCLKIN+
19	GND
20	RXIN3-
21	RXIN3+
22	GND
23	NC
24	NC
25	GND
26	NC
27	DIMO
28	SELB
29	AVDD
30	GND
31	LED-
32	LED-
33	L/R
34	U/D
35	VGL
36	GND
37	GND
38	VGH
39	LED+
40	LED+

The non-specified tolerance of dimension is ±0.3mm.