SPECIFICATIONS

CUSTOMER	:	CDE012
SAMPLE CODE	:	SH800480T013-IHC09
MASS PRODUCTION CODE	:	PH800480T013-IHC09
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	009
DRAWING NO. (Ver.)	:	LMD-PH800480T013-IHC09 (Ver.005)
PACKAGING NO. (Ver.)	:	PKG-PH800480T013-IHC09 (Ver.002)

Customer Approved

Date:

Approved	Checked	Designer
黃秋源 Oliver Huang	石建莊 Stone Shin	黃俊清 Ackey Huang

POWERTIP
2020.11.13
TW RD APR

□ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

Represented by:

FIRST Components s.r.l.
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1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Resolution	800 *3 (RGB) * 480 Dots
LCD Type	a-Si TFT , Normally white , Transmissive type
Screen size(inch)	7.0 inch
Viewing Direction	6 O'clock
Surface treatment	Anti-Glare
Color configuration	R.G.B. Vertical Stripe
Backlight Type	White LED B/L
Weight	181 g
Interface	24 Bits RGB Interface
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	186.8 (W) * 110.56 (L) * 5.29 (H)	mm

LCD panel

Item	Standard Value	Unit
Active Area	154.08 (W) * 85.92 (L)	mm

Note : For detailed information please refer to LCM drawing.

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1.3 Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply for TFT Panel	VDD	GND=0V	-0.3	+5.0	V
Power Supply for Backlight Unit	VCC	GND=0V	-0.3	+20.0	V
Operating Temperature	T_{OP}	-	-20	+70	°C
Storage Temperature	T_{ST}	-	-30	+80	°C

The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

1.4 DC Electrical Characteristics

Module GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for TFT Panel	VDD	GND=0V	3.0	3.3	3.6	V
Power Supply for Backlight Unit	VCC	GND=0V	5	12	15	V
Input Voltage for TFT Panel	V_{IH}	GND=0V	0.7VDD	-	VDD	V
	V_{IL}	GND=0V	0	-	0.3VDD	V
Supply Current for TFT Panel	IDD	IDD@VDD=3.3V	-	110	160	mA
Supply Current for Backlight Unit	ICC	ICC@VCC=5V	-	650	780	mA
Supply Current for Backlight Unit	ICC	ICC@VCC=12V	-	240	360	mA
Input Voltage for PWM Signal	VPH	GND=0V	1.2	-	-	V
	VPL	GND=0V	-	-	0.4	V
Dimming Clock Rate	fP	GND=0V	5	-	100	KHz

1.5 Optical Characteristics

TFT LCD Module VDD = 3.3 V, Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	unit	
Response time	Rise	Tr	Ta = 25°C θX, θY = 0°	-	10	20	ms	Note 2
	Fall	Tf		-	15	30		
Viewing angle	Top	θY+	CR ≥ 10	40	50	-	Deg.	Note 4
	Bottom	θY-		60	70	-		
	Left	θX-		60	70	-		
	Right	θX+		60	70	-		
Contrast ratio		CR	Ta = 25°C θX , θY = 0°	400	500	-	-	Note 3
Color of CIE Coordinate (With B/L)	White	X		0.23	0.28	0.33	-	Note1
		Y		0.27	0.32	0.37		
	Red	X		0.52	0.57	0.62		
		Y		0.31	0.36	0.41		
	Green	X		0.29	0.34	0.39		
		Y		0.55	0.60	0.65		
	Blue	X		0.09	0.14	0.19		
		Y		0.02	0.07	0.12		
Average Brightness Pattern=white display (With LCD) *1		IV	VCC=12.0V PWM="High" (Duty=100%)	680	850	-	cd/m^2	Note1
Uniformity (With LCD) *2		△B	VCC=12.0V PWM="High" (Duty=100%)	70	-	-	%	Note1

1.6 Backlight Characteristics

Maximum Ratings

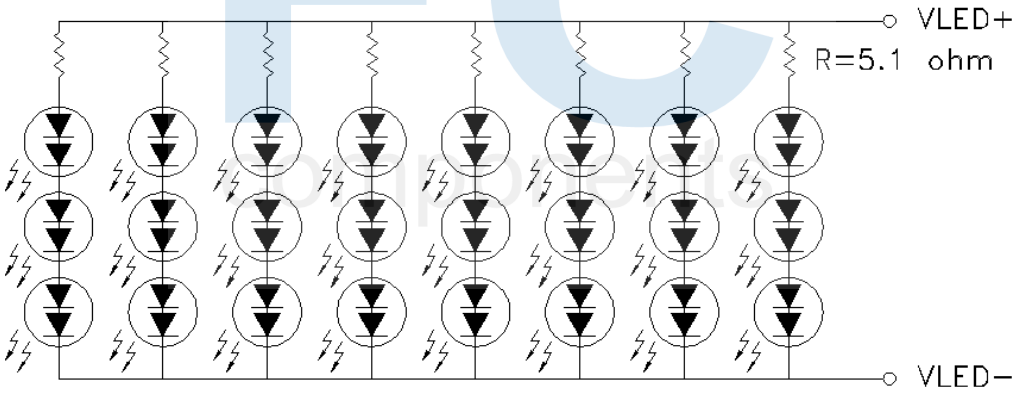
Item	Symbol	Min.	Max.	Unit	Remark
LED Forward Current	I_F	35		mA	One LED
LED Reverse Voltage	V_R	10		V	

Electrical / Optical Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED Voltage	V_L	16.8	18.0	19.2	V	Note1
LED Current	I_L	-	140	-	mA	-
LED life time	-	50000	-	-	H_r	Note2

Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25 °C and I_L =140 mA.

Note 2: The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25 °C and I_L =140 mA. The LED life time could be decreased if operating I_L is larger than 140 mA.



1.7 Touch Panel Characteristics

Features

Item	Standard Value
Touch Panel Size	7”
Touch type	Projective Capacitive Touch Panel
Input Method	Finger / 5 Points touch
Output Interface	I²C
IC	HY4635
I²C Address	0x38(7 Bits)

I²C Address

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	1	1	1	0	0	0	R/W

Bit 0: 0 for Write / 1 for Read

Mechanical Specifications

Item	Standard Value	Unit
Viewing Area	154.88 (W) * 86.72 (L)	mm
Number of sensing channel	24 * 14	

Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	TPVDD	-	-0.3	+6.0	V
Operating Temperature	T_{OP}	-	-20	+70	°C
Storage Temperature	T_{ST}	-	-30	+80	°C

DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	TPVDD	-	2.8	3.3	3.6	V
Input High Voltage	VIH	-	0.85 * TPVDD	-	-	V
Input Low Voltage	VIL	-	-	-	0.15 * TPVDD	V

Optical Characteristics

Item	Standard Value	Unit
Total light transmittance	85% or more	-
Hardness	⩾6H	-

Touch Panel IC Read/Write description & Register Mapping

Reference: HYCON Driver Porting Reference Guide.

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2.2 Interface Pin Description

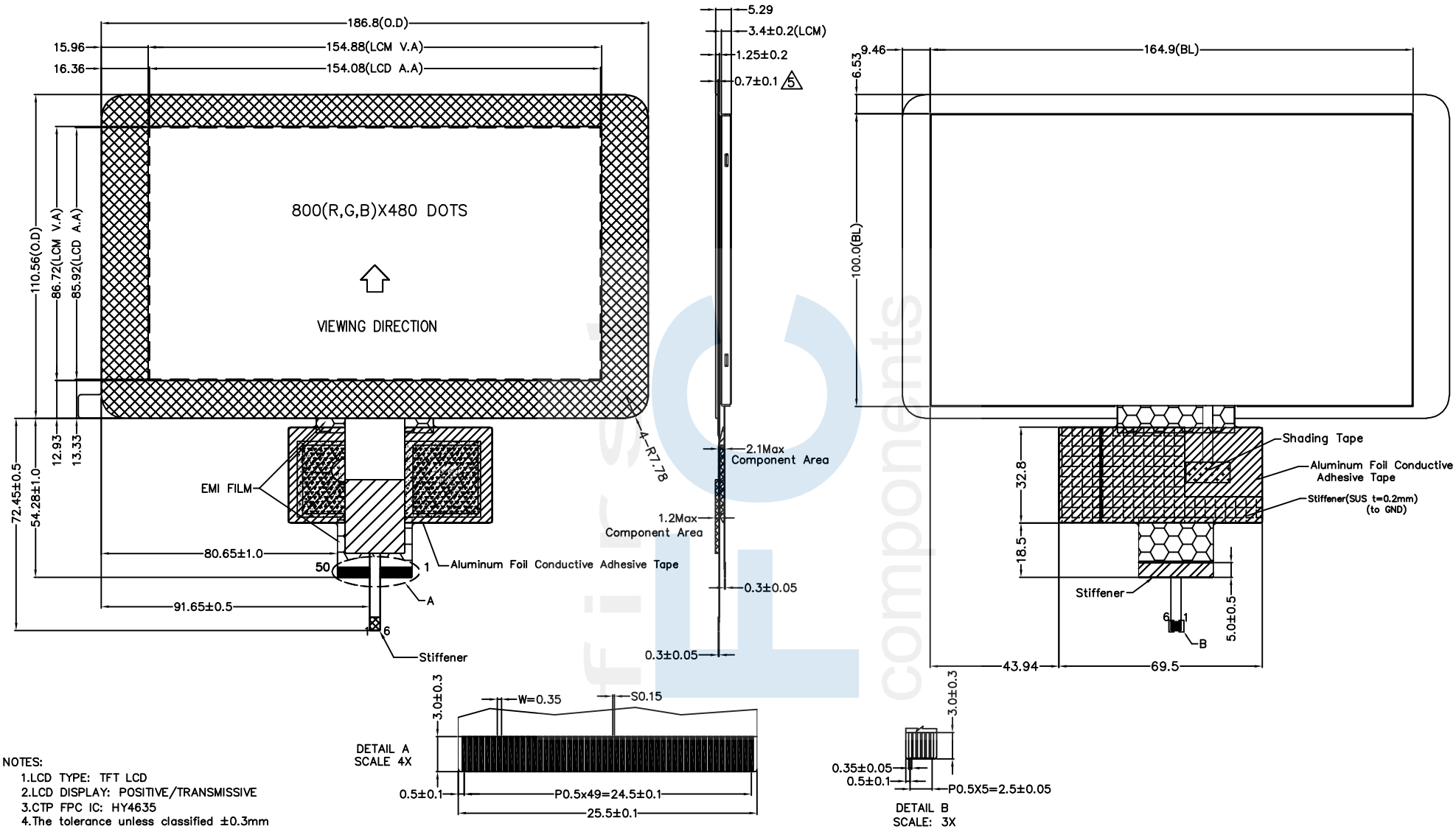
TFT LCM Interface

Pin#	Name	DESCRIPTION
1	GND	Power Ground.
2	VDD	Power for Digital Circuit.
3	VDD	Power for Digital Circuit.
4	VCC	Power For LED backlight.
5	VCC	Power For LED backlight.
6	PWM	Shutdown & Dimming control input for backlight. Do not allow this pin to float. “Hi” =100%, “Low” = 0%.
7	GND	Power Ground.
8	R0	Red Data.
9	R1	Red Data.
10	R2	Red Data.
11	R3	Red Data.
12	GND	Power Ground.
13	R4	Red Data.
14	R5	Red Data.
15	R6	Red Data.
16	R7	Red Data.
17	GND	Power Ground.
18	G0	Green Data.
19	G1	Green Data.
20	G2	Green Data.
21	G3	Green Data.
22	GND	Power Ground.
23	G4	Green Data.
24	G5	Green Data.
25	G6	Green Data.
26	G7	Green Data.
27	GND	Power Ground.
28	B0	Blue Data.
29	B1	Blue Data.

Pin#	Name	DESCRIPTION
30	B2	Blue Data.
31	B3	Blue Data.
32	GND	Power Ground.
33	B4	Blue Data.
34	B5	Blue Data.
35	B6	Blue Data.
36	B7	Blue Data.
37	GND	Power Ground.
38	HS	Line synchronization signal. Horizontal Sync Input.
39	VS	Frame synchronization signal. Vertical Sync Input.
40	GND	Power Ground.
41	DE	Display enable pin from controller. Data Input Enable.
42	GND	Power Ground.
43	DCLK	Sample clock. Data will be latched at the falling edge of DCLK.
44	GND	Power Ground.
45	CS(NC) / ID1	No Function./ ID[4:1]These pins select LCM type.
46	SDIN(NC) / ID2	No Function./ ID[4:1]These pins select LCM type.
47	SCK(NC) / ID3	No Function ./ ID[4:1]These pins select LCM type.
48	DISPLAY CONTROL / ID4	Display Enable(Hi Active)./ ID[4:1]These pins select LCM type.
49	/RESET	Global Reset(Low Active).
50	GND	Power Ground.

Capacitive Touch Panel (CTP) Interface

Pin No.	Symbol	Function
1	GND	Ground.
2	TPVDD	Power.
3	SCL	I^2C Clock.
4	SDA	I^2C Data.
5	INT	The interrupt from the CTP to the Host.
6	RESET	RESET.



NOTES:
1. LCD TYPE: TFT LCD
2. LCD DISPLAY: POSITIVE/TRANSMISSIVE
3. CTP FPC IC: HY4635
4. The tolerance unless classified ±0.3mm

REV	REV BY	REVISER	DATE
007			
006			
005	MODIFY DRAWING	Kevin	2020/04/28
004	MODIFY DRAWING	Kevin	2017/11/24
003	MODIFY DRAWING	Kevin	2017/11/23
002	MODIFY DRAWING	Kevin	2017/11/14
001	NEW DRAWING	Kevin	2017/03/01

PART NO: PH800480T013-IHC09

DRAWING NAME: LMD-PH800480T013-IHC09

TITLE: LCD MODULE DRAWING

久正光電股份有限公司
POWERTIP TECHNOLOGY CORPORATION

Design	Kevin	(3)	Surface
Check	Stone	Unit	MM
Approve	Oliver	Scale	1:1
		Page	1/1
		Material	
		Thickness	
		Quantity	

Length(Min) (mm) \ Tolerance / Precision	Precision Level
1 ~ 4	-
4 ~ 16	-
16 ~ 63	-
63 ~ 250	-
250 ~ 1000	-

PT-A-054-01

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