SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SIA800480T013IHC09
MASS PRODUCTION CODE	:	HIA800480T013IHC09
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	002
DRAWING NO. (Ver.)	:	LMD-HIA800480T013IHC09 (Ver.002)
PACKAGING NO. (Ver.)	:	PKG-HIA800480T013IHC09 (Ver.001)

Customer Approved

Date:

Approved	Checked	Designer
林裘中 Daniel Lin	呂清溪 Marcs Lu	黃煜庭 Yuting Huang

POWERTIP
2022.01.17
TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

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1. SPECIFICATIONS

1.1 Features

Hardware

CPU	RISC Processor	i.MX8M Mini Quad Cortex-A53 @ 1.6 GHz
Memory	On Board RAM	2GB LPDDR4 SDRAM
	On Board ROM	8GB eMMC Flash
	External Storage	1x Micro SD (max. 32G)
Display	Resolution	800 (RGB) x 480 DOTS
	LCD Type	a-Si TFT, Normally white, Transmissive type
	Screen Size	7.0 inch
	Touch Panel	Projected Capacitive Touch (I2C)
I/O	Display Interface	1x MIPI DSI 1x RGB
	USB	1x USB OTG 2x USB1.1/2.0 Compliant Host 1x USB1.1/2.0 in Mini-PCIe Connector
	PCI Express	1x Mini-PCIe Connector(1-lane)
	Ethernet	10/100/1000 Mbps
	Analog Audio	1 x Headphone Jack 1 x Input
	Wireless	WIFI IEEE 802.11 a/b/g/n/ac Bluetooth 4.2
	Serial	2 x UART (one for Debug Used) 4 x I2C 1 x SPI
Power Input	DC	9V ~ 24V

Software

OS	Embedded	Android / Yocto Linux

1.2 Mechanical Specifications

Item	Standard Value	Unit
Board Outline Dimension	118.1(W) x 87.0 (L) x 25.0(H) MAX	mm
Display Active Area	154.08 (W) * 85.92 (L)	mm

1.3 Absolute Maximum Ratings

Ta = 25℃

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply	V_{IN}	—	-0.3	26.0	V
Operating Temperature	T_{OP}	—	-20	70	℃
Storage Temperature	T_{ST}	—	-30	80	℃
Humidity	H_D	Ta=60 ℃	10	90	%RH

1.4 DC Electrical Characteristics

Ta = 25℃

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{IN}	-	9	12	24	V
Power Supply Current	I_{IN1}	V_{IN} = 12V	-	450	-	mA
IO High-Level input voltage	V_{IH}	-	0.7xV_{DD3V3}	-	V_{DD3V3+}0.3	V
IO Low-Level input voltage	V_{IL}	-	-0.3	-	0.3xV_{DD3V3}	V
IO High-Level output voltage	V_{OH}	-	-	-	3.6	V
IO Low-Level output voltage	V_{OL}	-	-0.3	-	-	V

Note 1: V_{IN} is connected to 'J4' connector.

1.5 Optical Characteristics

Ta=25℃

Item		Symbol	Condition	Min.	Typ.	Max.	unit	-
Response time	Tr + Tf	25˚C	-	-	25	50	ms	Note2
Viewing angle	Top	θY+	CR ≥ 10	-	60	-	Deg.	Note4
	Bottom	θY-		-	60	-		
	Left	θX		-	60	-		
	Right	θX		-	60	-		
Contrast ratio		CR	-	500	600	-	-	Note3
Color of CIE Coordinate （LCD & BL）	White	X	Ta=25˚C θX, θY=0˚C	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 （LCD & BL）*1		IV	PWM=”High” (Duty=100%)	680	850	-	cd/m^2	
Uniformity （LCD & BL）*2		△B		70	-	-	%	

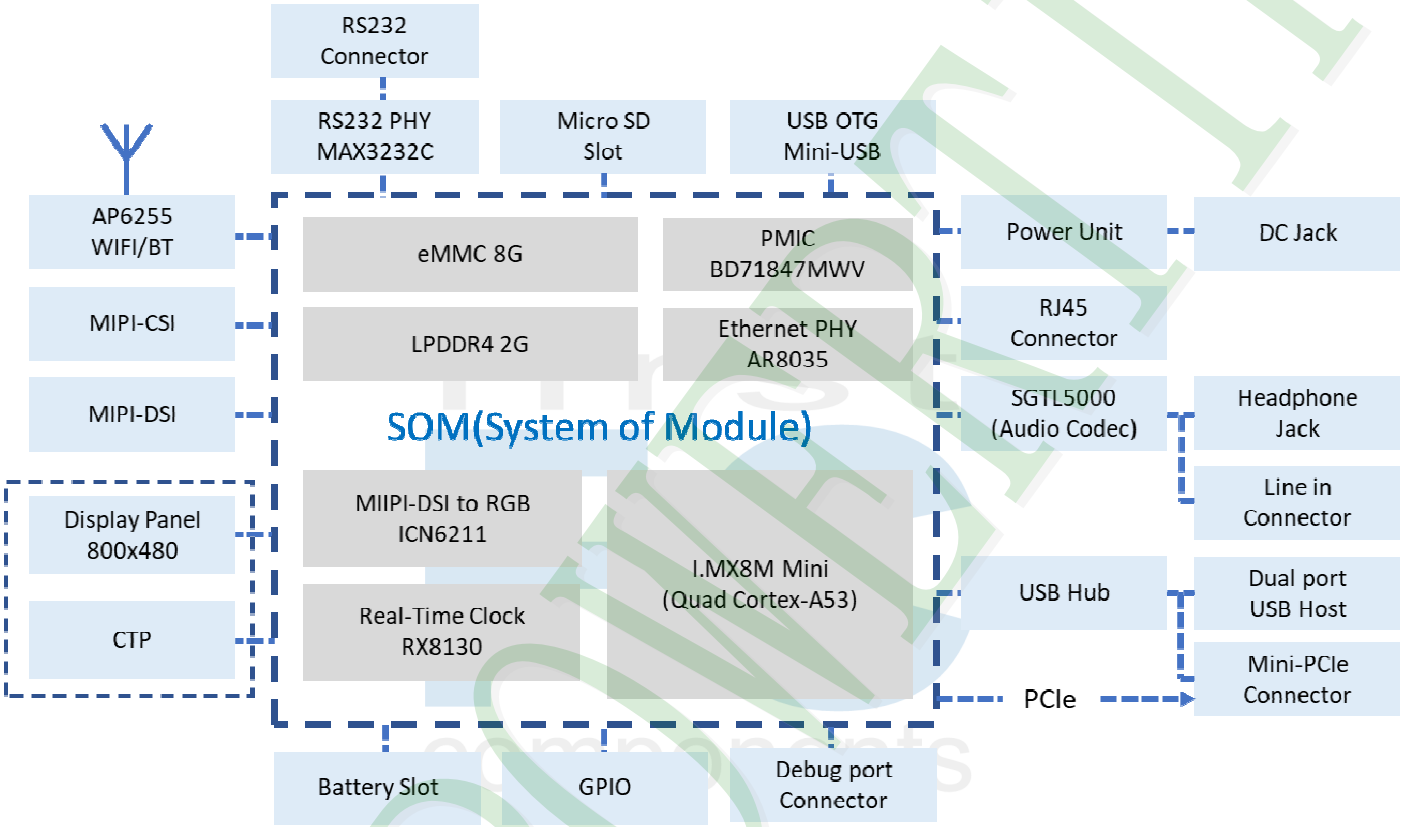
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

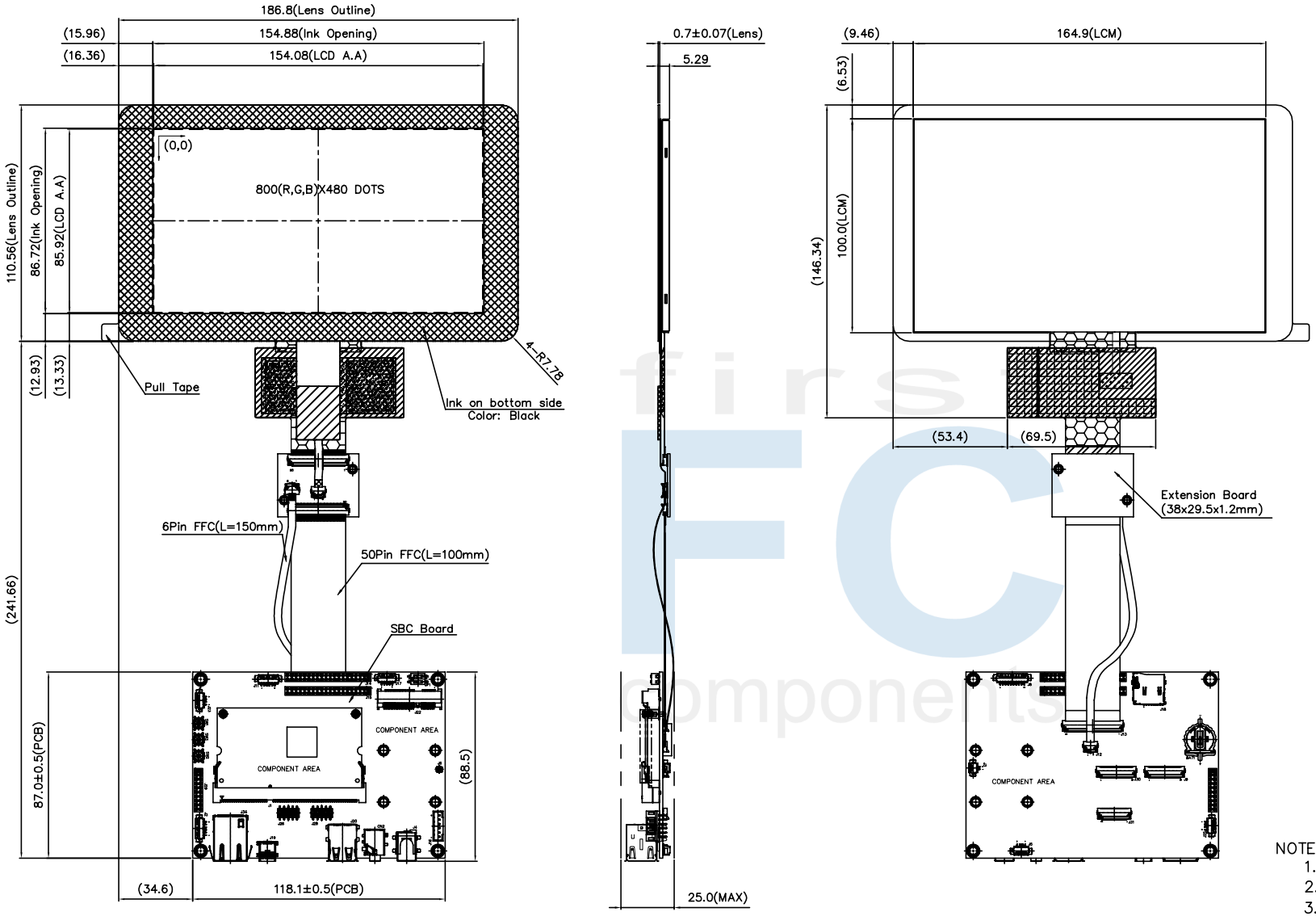
* See Appendix

2.1.2 Block Diagram



2.2 Connector list

Symbol	Description	Note
J2	Extension Power Pin	
J3	RTC Power Supply (Pitch 1.25mm)	
J4	Power Supply (DC Jack)	
J5	Audio Signal Input (Pitch 1.25mm)	
J6	Antenna Connector	
J8	-	No Function
J9	Display – MIPI DSI (Pitch 0.5mm 30pin)	
J11	CTP Interface (Pitch 1.25mm 6pin)	
J12	CTP Interface (Pitch 0.5mm 6pin)	(CTP)
J13	Display – Parallel RGB (Pitch 0.5mm 50pin)	(Display Panel)
J14	-	No Function
J15	Display – Parallel RGB (Pitch 2.0mm, 2x20pin)	
J16	Backlight Power (Pitch 2.0mm 6 pin)	
J17	USB 1.1/2.0 Host (Pitch 1.25mm, 5pin)	
J18	Micro SD Card	
J19	USB 2.0 Device USB Port Mini-B (USB OTG)	
J20	USB 1.1/2.0 Host USB Port Type A	
J22	Mini-PCIe Connector	
J23	Power Output (Pitch 1.25mm)	
J25	UART2 Debug (Pitch 1.25mm 4pin)	
J26	RS232 (Pitch 2.0mm 2x5pin)	
J28	-	No Function
J29	GPIO (Pitch 2.0mm 2x10pin)	
J30	Camera – MIPI CSI (Pitch 0.5mm 30pin)	
J31	-	No Function
J34	Ethernet RJ45	
CN2	Standard Headphone Jack ψ3.5mm.	
SW1	Reset Button	
SW2	ONOFF Power Button	
JP1	Boot Switch	
BAT1	Battery	



NOTES:
1. LCD TYPE: TFT LCD
2. LCD DISPLAY: POSITIVE/TRANSMISSIVE
3. VIEW DIRECTION: 6 O'CLOCK
4. The tolerance unless classified ±0.3mm

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002	REMOVE J7、J10、J27	Nini	2021/12/14
001	NEW DRAWING	Nini	2021/04/15

PART NO: HIA800480T013IHC09

DRAWING NAME : LMD-HIA800480T013IHC09

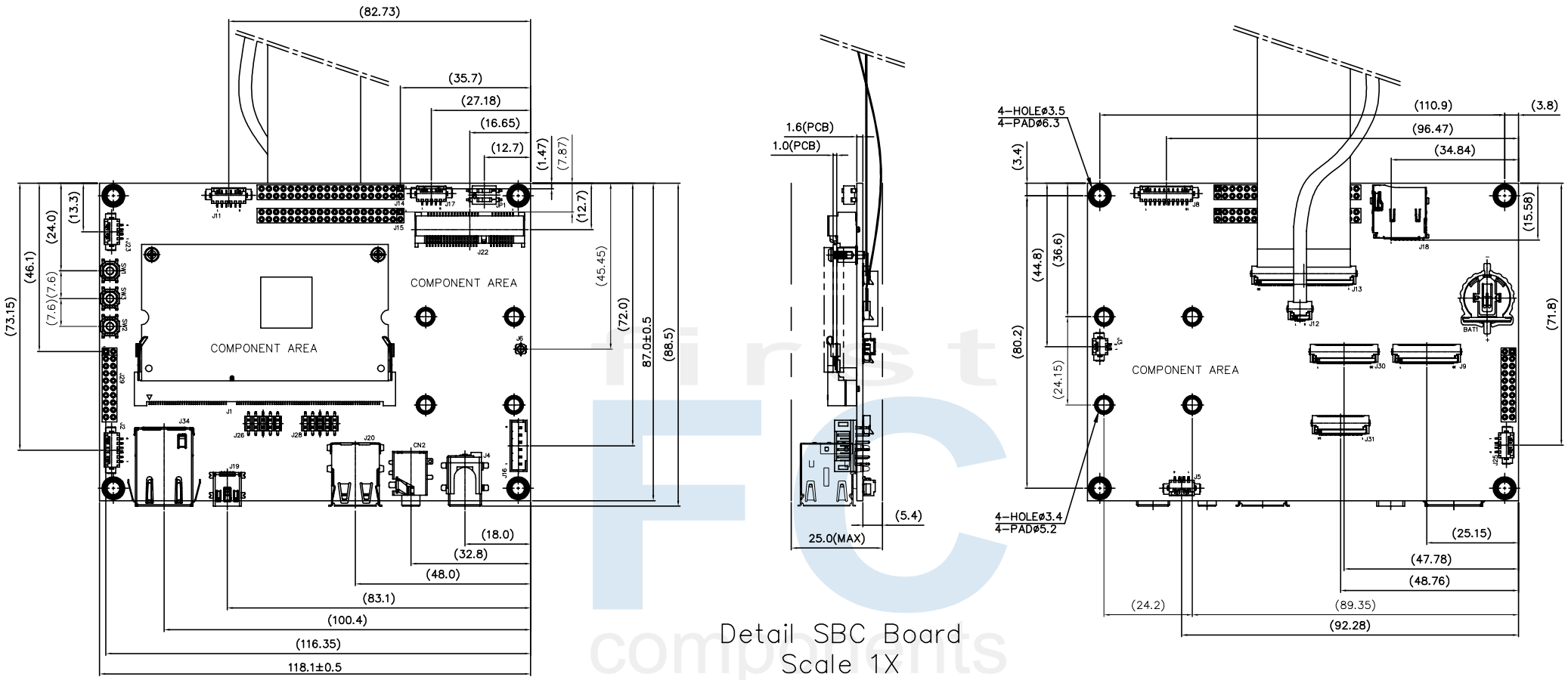
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Design	Nini Chen	(3)	Surface		
Check	Marcs Lu	Unit	MM	Material	
Approve	Daniel Lin	Scale	FIT	Thickness	
		Page	1/2	Quantity	

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

PT-A-054-01



Detail SBC Board
Scale 1X

NOTES:

5.J2 ,J11: Molex 532610671 or Compatible
6.J3: Molex 532610271 or Compatible
7.J5 ,J23 ,J25: Molex 532610471 or Compatible
8.J8: Molex 532611071 or Compatible
9.J9 ,J30: OMRON XF2M-3015-1A or Compatible
10.J16: Molex 894000610 or Compatible
11.J17: Molex 532610571 or Compatible
12.J31: OMRON XF2M-2415-1A or Compatiblele

REV	REV BY	REVISER	DATE
007			
006			
005			
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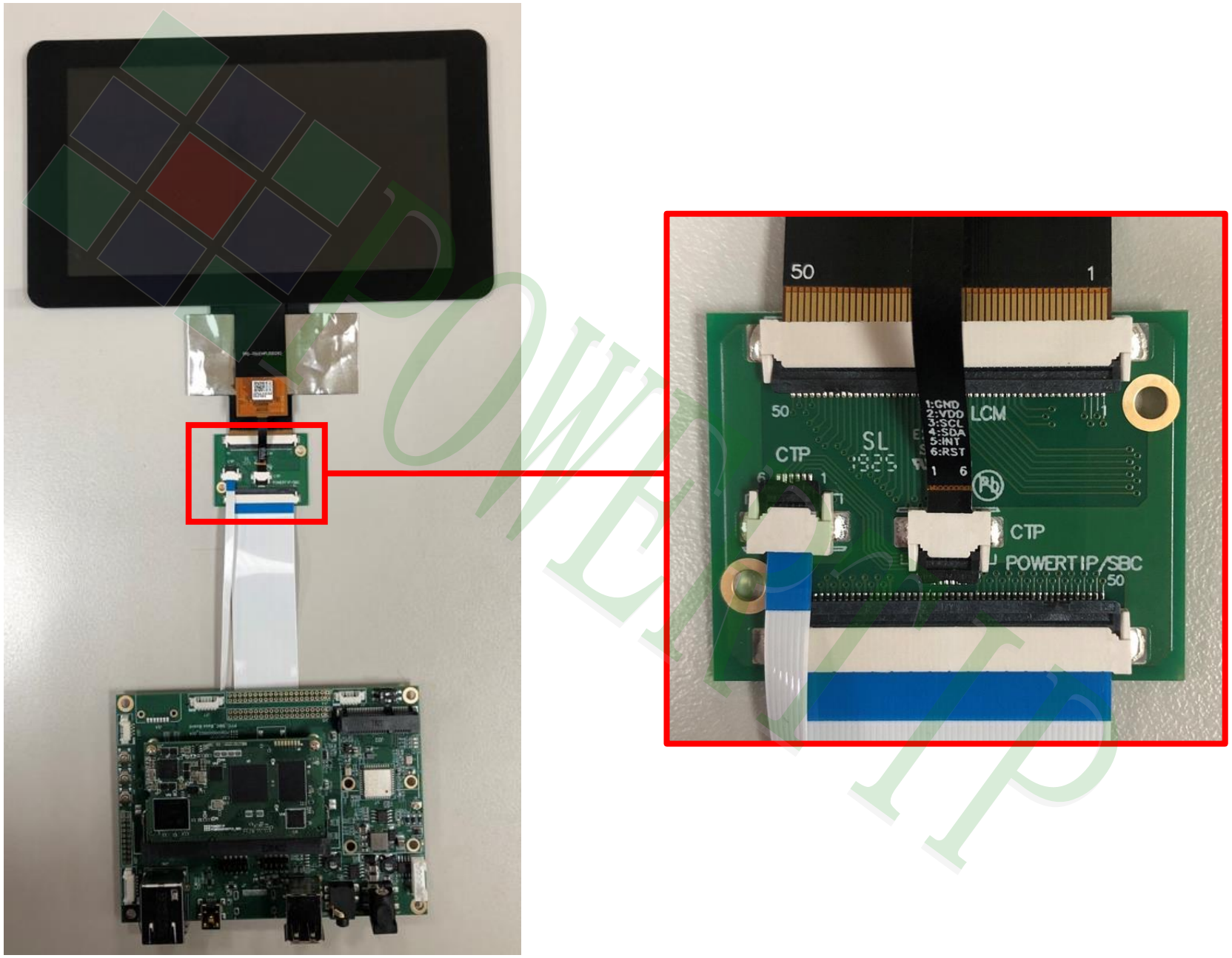
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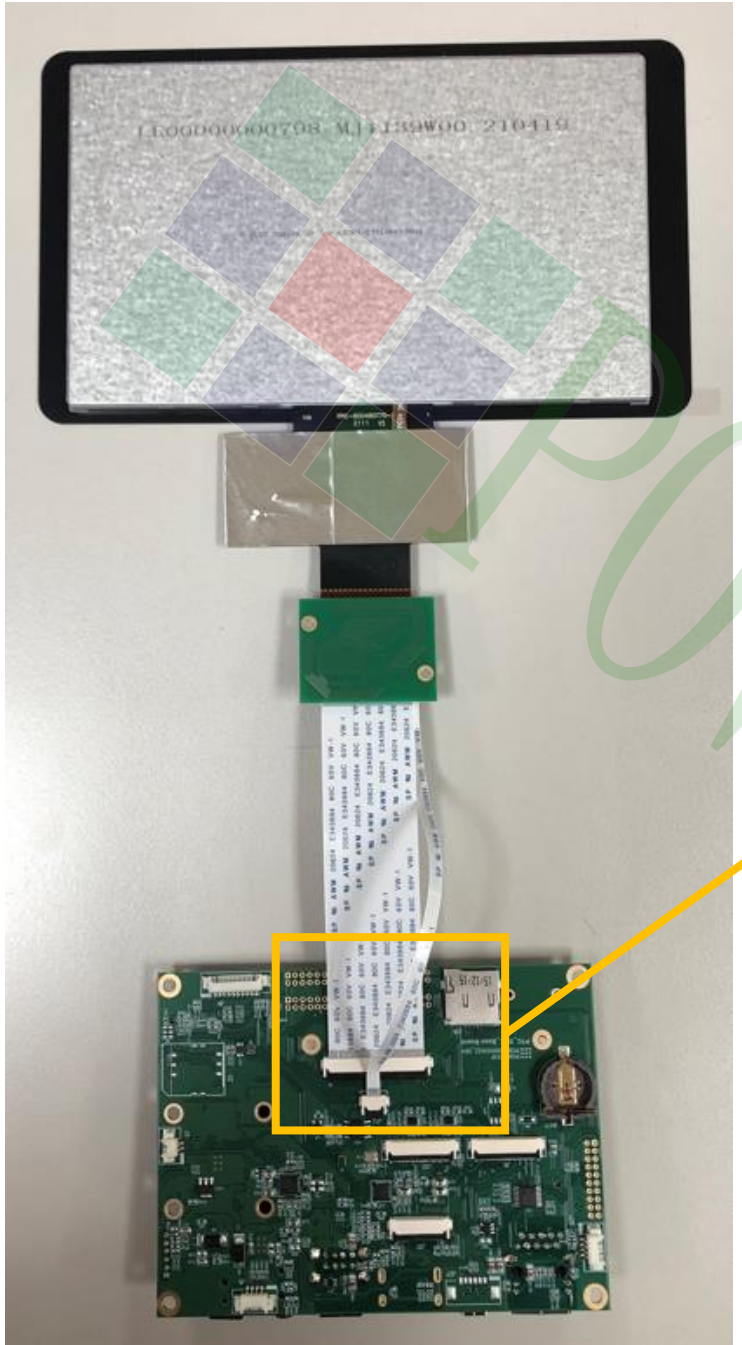
Length(Min) (mm) \ Tolerance \ Precision	Level
1 ~ 4	-
4 ~ 16	-
16 ~ 63	-
63 ~ 250	-
250 ~ 1000	-

HIA800480T013IHC09 Assembly Guide(TOP)



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HIA800480T013IHC09 Assembly Guide(BOTTOM)





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