SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SRA128800T006-ZFC
MASS PRODUCTION CODE	:	HRA128800T006-ZFC
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	005
DRAWING NO. (Ver.)	:	LMD-HRA128800T006-ZFC (Ver.003)
PACKAGING NO. (Ver.)	:	PKG-HRA128800T006-ZFC (Ver.003)

Customer Approved

Date:

Approved	Checked	Designer
呂清溪 Marcs Lu	王兆以 Hank Wang	侯旻佑 Jerry Hou

POWERTIP 2024.03.22 TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

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History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
06/05/2023	01	001	Preliminary	-	Jerry
09/25/2023	01	002	1. First sample 2. Revise Outline Dimension (Display) 3. Revise Power Supply Current 4. Revise Optical Characteristics 5. Update drawing, packaging specifications and assembly guide	5 6 Appendix	Jerry
11/16/2023	01	003	1. Revise Reliability test 2. Update packaging specifications	34 Appendix	Jerry
12/13/2023	01	004	1. Update packaging specifications	Appendix	Jerry
03/19/2024	01	005	1. Add screw holes	Appendix	Jerry

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1. SPECIFICATIONS

1.1 Features

Hardware		
CPU	RISC Processor	PX30 Quad-Core ARM Cortex-A35
Memory	On Board RAM	2GB DDR3L SDRAM
	On Board ROM	8GB eMMC Flash
	External Storage	1 × Micro SD (max. 32G)
Display	Resolution	1280 × 800 (RGB) DOTS
	Display mode	Transmissive, Normally Black
	Touch type	Projective Capacitive Touch Panel
	Interface	8-bit LVDS
I/O	USB	1 × USB OTG 2 × USB1.1/2.0 Compliant Host
	Ethernet	10/100 Mbps
	Analog Audio	1 × Output 1 × Input
	Wi-Fi	IEEE 802.11 a/b/g/n/ac
	Bluetooth	4.2
	Display	1 × LVDS
	Serial	6 × UART (One for Debug Used) 3 × I2C 1 × SPI
Power Input	DC	9V ~ 24V

Software		
OS	Embedded	Debian 9 (Linux 4.4.194)

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1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension (PCBA)	118.10(W) × 87.0(L) × 25.0(H) MAX	mm
Outline Dimension (Display)	254.96(W) × 173.6(L) × 14.5(H) MAX	mm
Active Area (Display)	216.96(W) × 135.60(L)	mm

1.3 Absolute Maximum Ratings

Ta = 25°C

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply	V_{IN}	—	-0.3	26.0	V
Operating Temperature (T_s)	T_{OP}	—	0	70	°C
Storage Temperature (T_a)	T_{OP}	—	-30	80	°C
Humidity	H_D	T_a=60 °C	10	90	%RH

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 product may be permanently destroyed.

Note 1: T_s is the temperature of panel's surface,

Note 2: T_a is the ambient temperature of samples.

1.4 DC Electrical Characteristics

Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	V_{IN}	-	9	12	24	V
Power Supply Current	I_{IN1}	V_{IN} = 12V	-	0.47	-	A
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.

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1.5 Optical Characteristics

VDD=3.3V, Ta=25°C

Item	Symbol		Condition	Min.	Typ.	Max.	unit	
Response time	Tr+Tf		Ta = 25°C θX, θY = 0°	-	25	50	ms	Note 2
Viewing angle	Top	θY+	CR ≥ 10	-	85	-	Deg.	Note 4
	Bottom	θY-		-	85	-		
	Left	θX-		-	85	-		
	Right	θX+		-	85	-		
Contrast ratio		CR	Ta = 25°C θX , θY = 0°	600	800	-		Note 3
Color of CIE Coordinate	White	X		0.25	0.30	0.35	-	Note1
		Y		0.29	0.34	0.39		
	Red	X		0.52	0.57	0.62		
		Y		0.31	0.36	0.41		
	Green	X		0.26	0.31	0.36		
		Y		0.53	0.58	0.63		
	Blue	X		0.09	0.14	0.19		
		Y		0.08	0.13	0.18		
Average Brightness Pattern=white display (With LCD&TP)*1	IF		LED_Vcc =12.0V PWM="High" (Duty=100%)	360	400	-	cd/m^2	Note1
Uniformity (With LCD&TP)*2	△B		LED_Vcc =12.0V PWM="High" (Duty=100%)	70	-	-	%	Note1

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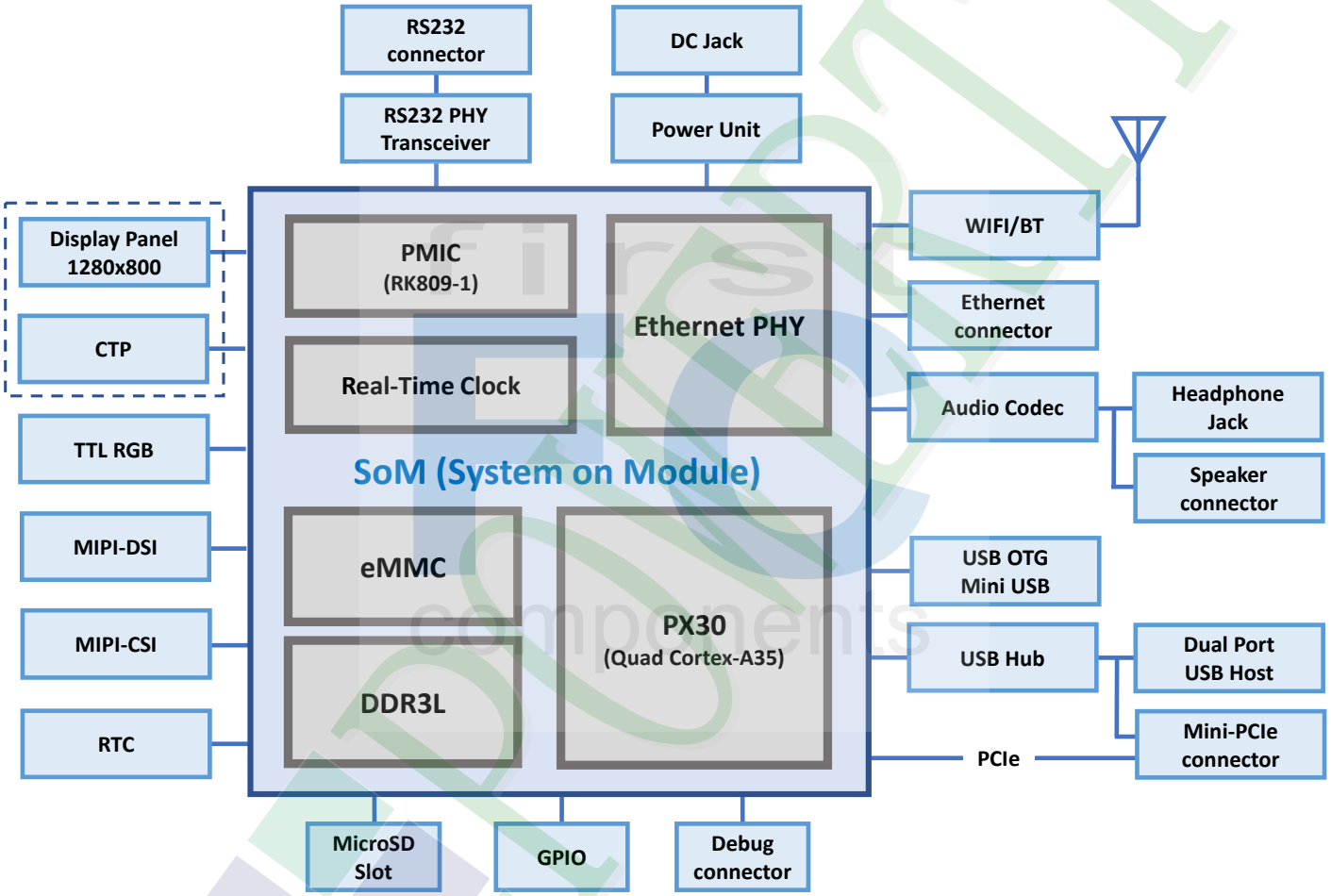
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram

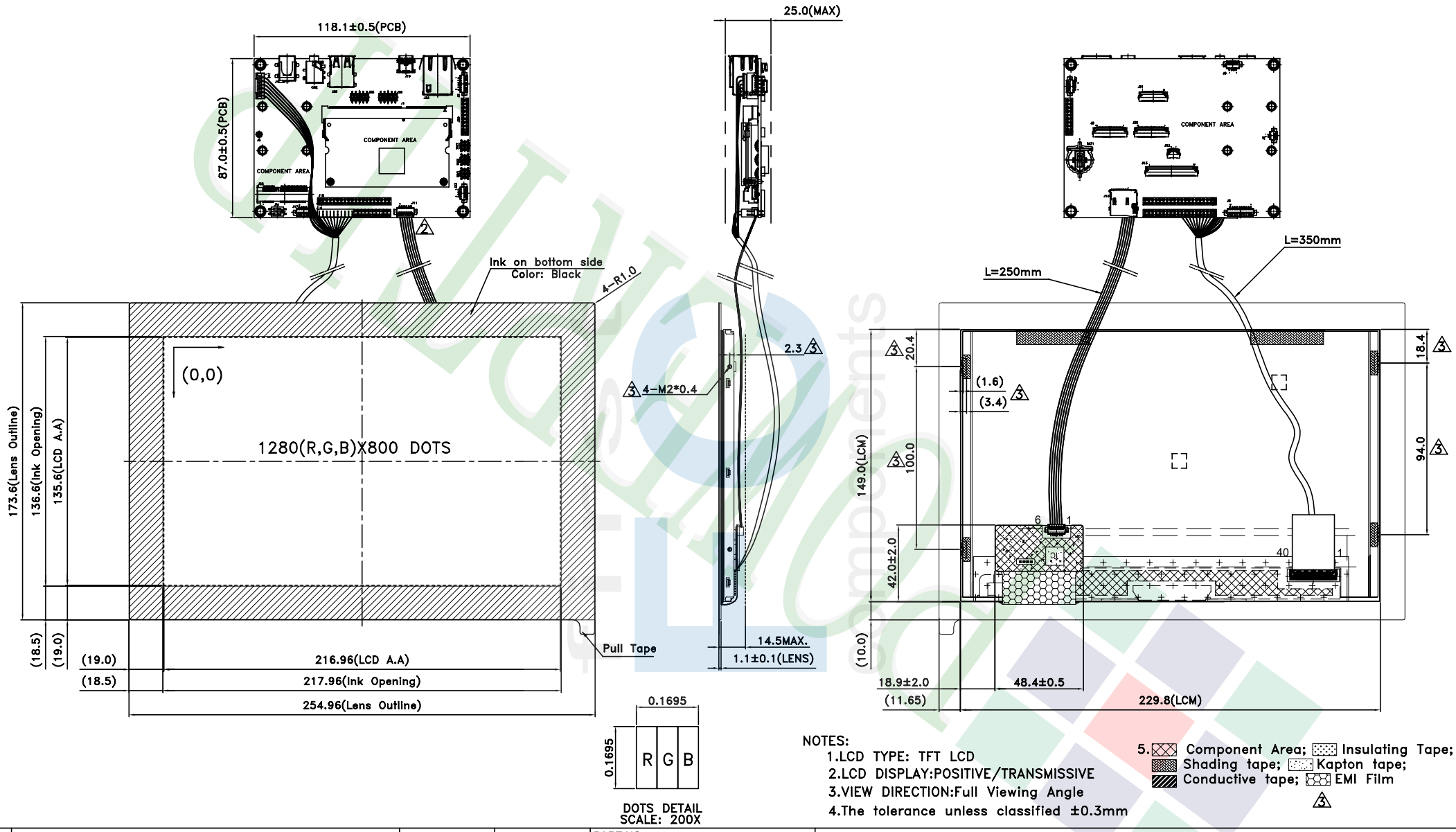


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2.2 Interface Pins

Symbol	DESCRIPTION	NOTE
J1	SODIMM 204 PIN	
J2	Boot Mode Control	
J3	RTC Power Supply (Pitch 1.25mm)	
J4	System Power Supply	
J5	Audio Signal Input (Pitch 1.25mm)	
J6	Antenna connector	
J7	HDMI	No function, not used
J8	Expansion	
J9	MIPI DSI (Pitch 0.5mm 30pin connector bottom contact)	
J11	CTP Interface (Pitch 1.25mm 6pin)	
J12	CTP Interface (Pitch 0.5mm 6pin connector bottom contact)	
J13	RGB Interface (Pitch 0.5mm 50pin connector bottom contact)	
J14	LVDS, MIPI DSI Interface (Pitch 2.0mm, 2x20pin)	
J15	RGB Interface (Pitch 2.0mm, 2x20pin)	
J16	Backlight Power (Pitch 2.0mm 6pin)	
J17	USB CTP	
J18	MicroSD Card	
J19	USB 2.0 Device Mini USB	
J20	USB 1.1/2.0 Host USB Port A Type	
J22	Mini PCIe	
J23	Power Output (Pitch 1.25mm)	
J25	Debug (Pitch 1.25mm, 4pin)	
J26	RS232 (Pitch 2.0mm, 2x5pin)	
J27	UART0	No function, not used
J29	GPIO (Pitch 2.0mm, 2x10pin)	
J30	MIPI CSI (Pitch 0.5mm 30pin connector bottom contact)	
J31	Pitch 0.5mm 24pin connector bottom contact	
J34	Ethernet RJ45	
BAT1	Battery Slot (CR1220)	
JP1	Boot Mode Switch	
CN2	Audio Signal Output (Standard Earphone Jack ψ3.5mm)	
SW1	Reset System	
SW2	PMIC Power On	
SW3	ADC2 Key In	

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NOTES:

1. LCD TYPE: TFT LCD
2. LCD DISPLAY:POSITIVE/TRANSMISSIVE
3. VIEW DIRECTION:Full Viewing Angle
4. The tolerance unless classified ±0.3mm
5. Component Area; Insulating Tape; Shading tape; Kapton tape; Conductive tape; EMI Film

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003	ADD SCREW HOLES	Nini	2024/03/21
002	UPDATE DRAWING	Nini	2023/09/18
001	NEW DRAWING	Nini	2023/07/05

PART NO: HRA128800T006-ZFC

DRAWING NAME : LMD-HRA128800T006-ZFC

TITLE: LCD MODULE DRAWING

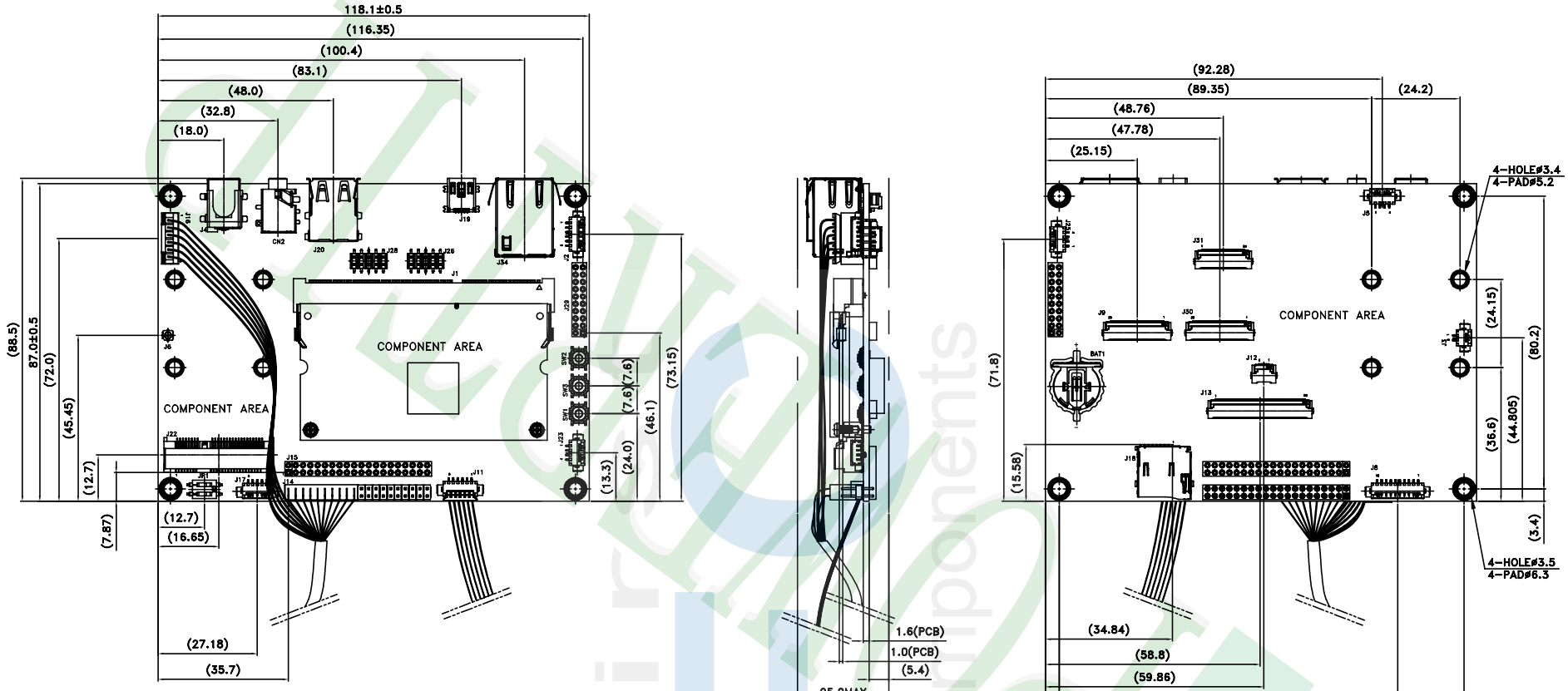
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Design	Nini	(3)	Surface		
Check	Jason	Unit	MM	Material	
Approve	Bright	Scale	FIT	Thickness	
		Page	1/2	Quantity	

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

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Detail SBC Board
Scale 1X

NOTES:

6.The tolerance unless classified ±0.2mm

7.J2,J11:Molex 532610671 or Compatible

8.J3:Molex 532610271 or Compatible

9.J5,J23,J25:Molex 532610471 or Compatible

10.J8:Molex 532611071 or Compatible

11.J9,J30:OMRON XF2M-3015-1A or Compatible

12.J12:OMRON XF2M-0615-1A or Compatible

13.J13:OMRON XF2M-5015-1A or Compatiblele

14.J16:Molex 894000610 or Compatible

15.J17:Molex 532610571 or Compatible

16.J31:OMRON XF2M-2415-1A or Compatiblele

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003	ADD SCREW HOLES	Nini	2024/03/21
002	UPDATE DRAWING	Nini	2023/09/18
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PART NO: HRA128800T006-ZFC

DRAWING NAME : LMD-HRA128800T006-ZFC

TITLE: LCD MODULE DRAWING

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Design	Nini	(3)	Surface		
Check	Jason	Unit	MM	Material	
Approve	Bright	Scale	FIT	Thickness	
		Page	2/2	Quantity	

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

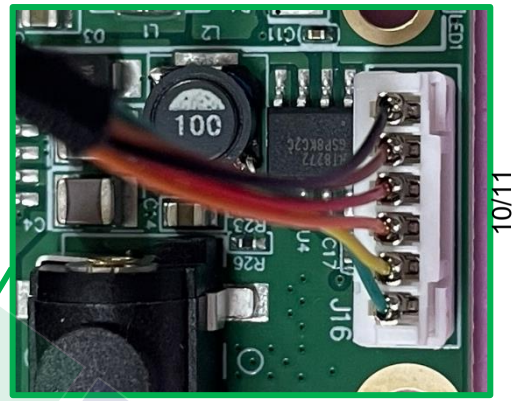
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HRA128800T006-ZFC Assembly Guide (TOP)



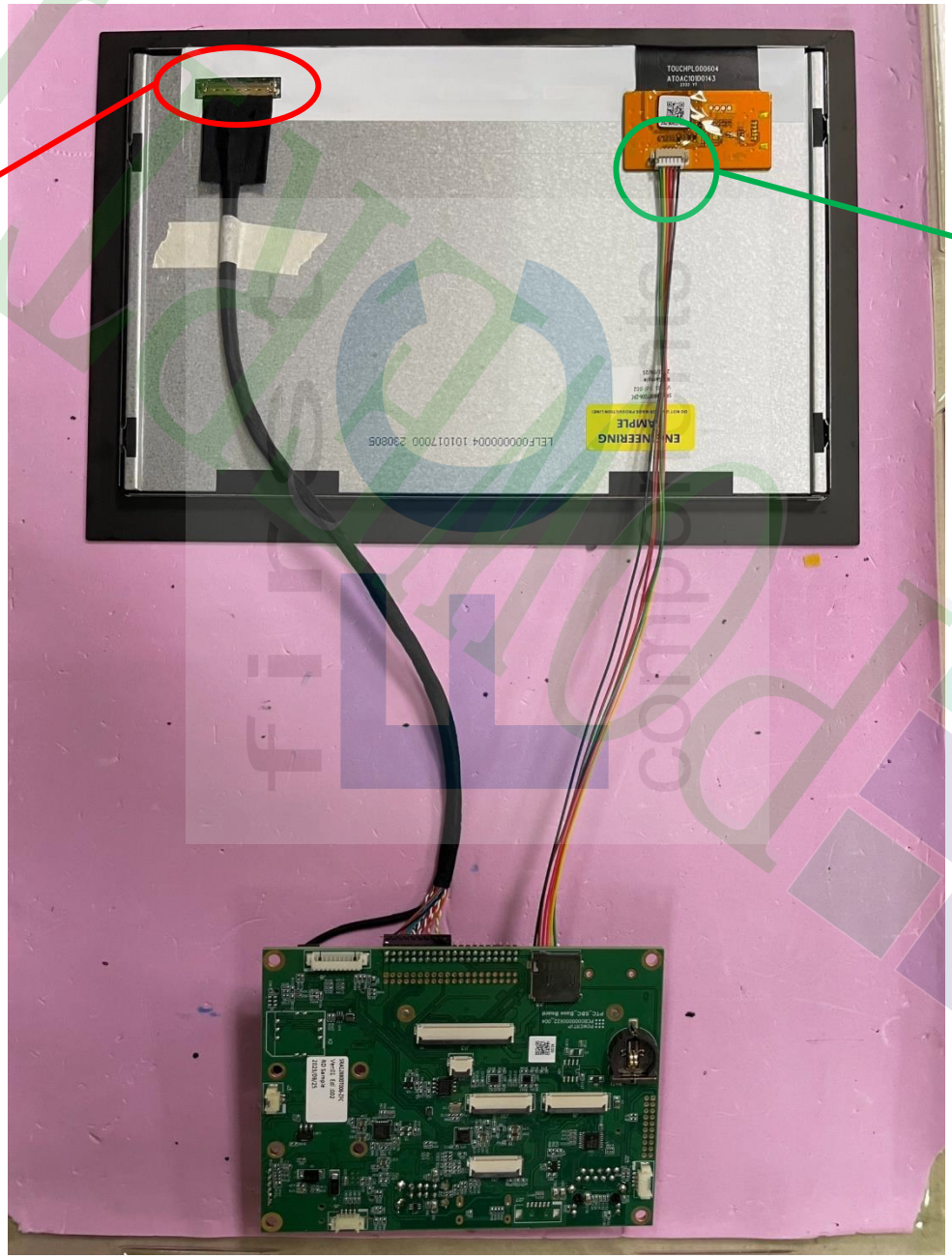




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HRA128800T006-ZFC Assembly Guide (BOTTOM)







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