SPECIFICATIONS

CUSTOMER	:	CBE005
SAMPLE CODE	:	SNA800480T013IHC09
MASS PRODUCTION CODE	:	HNA800480T013IHC09
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	002
DRAWING NO. (Ver.)	:	LMD- HNA800480T013IHC09 (Ver.001)
PACKAGING NO. (Ver.)	:	PKG- HNA800480T013IHC09 (Ver.001)

Customer Approved

Date:

Approved	Checked	Designer
林裘中 Daniel Lin	呂清溪 Marcs Lu	廖志豪 Rex Liao

POWERTIP
2020.02.03
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	N32926 (ARM926EJ-S) 64MB DDR2 SDRAM
Memory	On Board Flash	1Gb NAND Flash
	External Storage *	1x Micro SD (max. 32G)
I/O	USB	1x USB2.0 Device
	Serial	1 x UART

LCD Display

Item	Standard Value
Display Resolution	800 * 3 (RGB) * 480 Dots
LCD Type	a-Si TFT , Normally white , Transmissive type
Touch Panel	Projected Capacitive Touch
Screen size(inch)	7.0 inch
Color configuration	RGB Vertical Strip
Backlight Type	White LED B/L
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website : http://www.powertip.com.tw/news_detail.php?Key=1&cID=1

Note:

1. Support PWM Signal Output. (5kHz, Duty Cycle: 256 Step)
2. Support JPEG Codec.
3. Support H.264 & MJPEG Codec
4. Support Video Data Processor (VPE)
5. Support RTC

PS:

This product built-in Powertip communication protocol system firmware. It manipulates the GUI contents that generated by Powertip Graphic Editor software.

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	186.8(W) x 110.56(L) x 16.5 max. (H)	
Active Area	154.08 (W) x 85.92(L)	mm

Note : For detailed information please refer to drawing

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit	Remark
Power Supply	VIN	GND=0	-0.3	6.0	V	-
Operating Temperature	TOP (Ts)	Note 1	-20	70	°C	
Storage Temperature	TST (Ta)	Note 2	-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 product may be permanently destroyed.

Note 1：Ts is the temperature of panel's surface.

Note 2：Ta is the ambient temperature of samples.

1.4 DC Electrical Characteristics

Ta = 25℃

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	VIN	-	4.8	5.0	5.5	V
Power Supply Voltage of RTC	VBAT	-	2.0	-	3.6	V
Power Supply Current *1	IIN	VIN = 5.0V	-	1.5	2.0	A
Power Consumption of System	PIN	VIN = 5.0V	-	-	10.0	W
IO High-Level input voltage	VIH	-	2.0	-	V3V3+0.3	V
IO Low-Level input voltage	VIL	-	-	-	0.8	V
IO High-Level output voltage	VOH	-	2.4	-	-	V
IO Low-Level output voltage	VOL	-	-	-	0.4	V

1.5 Optical Characteristics

Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	unit	-
Response time	Tr+Tf	25℃	-	-	25	50	ms	-
Viewing angle	Top	θY+	CR ≥ 10		60	-	Deg.	Note 4
	Bottom	θY-			60	-		
	Left	θX-			60	-		
	Right	θX+			60	-		
Contrast ratio		CR	(Ta = 25°C θX , θY = 0°	500	600	-	-	Note 3
Color of CIE Coordinate （With B/L & T/P）	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 T/P)*1		IV	PWM=”High” (Duty=100%)	680	850	-	cd/m2	Note1
Uniformity (With T/P)*2		△B	PWM=”High” (Duty=100%)	70	-	-	%	Note1

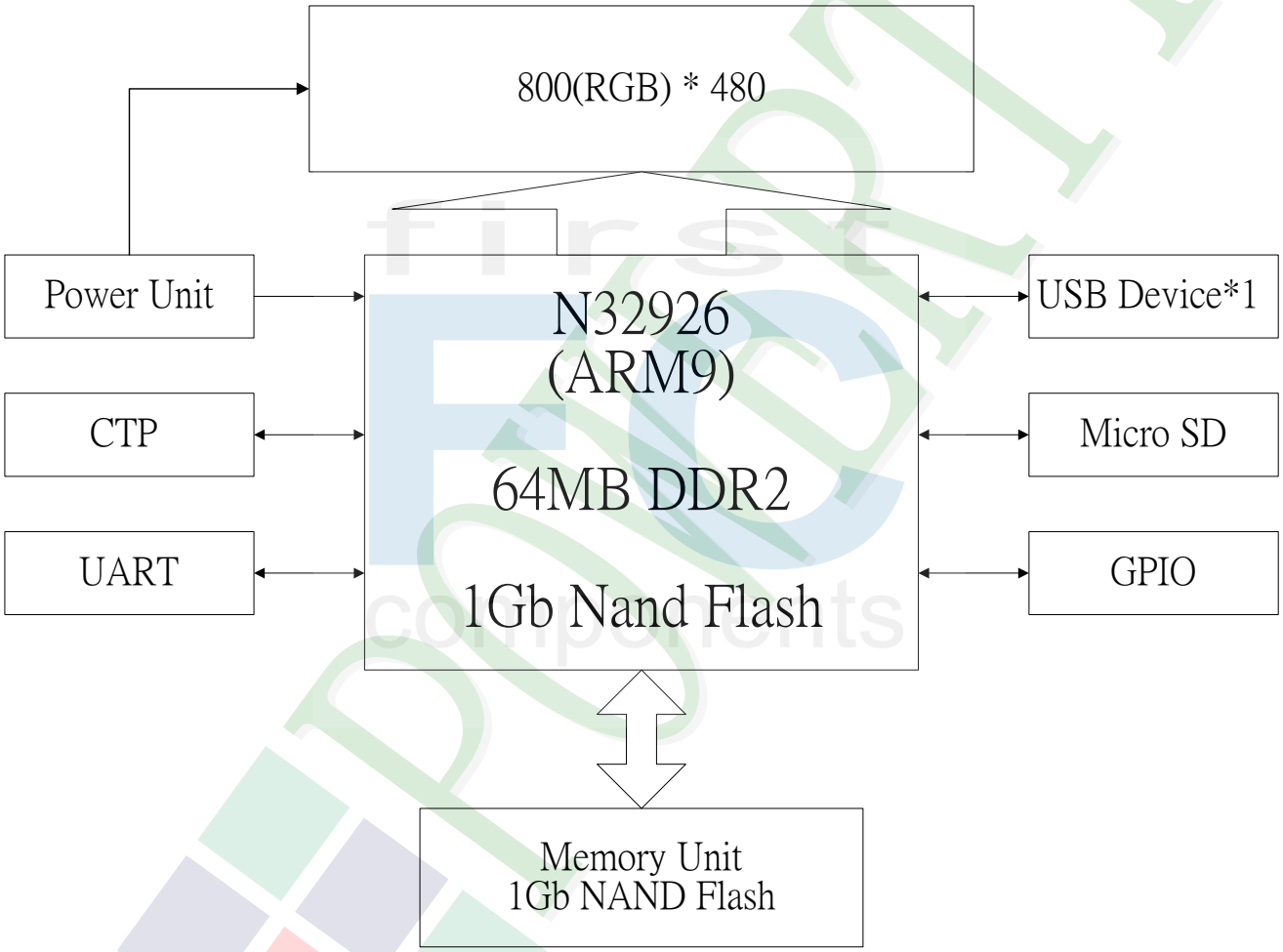
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



2.2 Interface Pin Description

J8 --- I/O

Pin No.	Symbol	Type	DESCRIPTION
1	GND	P	Power ground.
2	GPG9	IO	General Purpose I/O, Port G[9].
3	GPG8	IO	General Purpose I/O, Port G[8].
4	NC	-	Not Used.
5	GND	P	Power ground.
6	NC	-	Not Used.
7	GND	P	Power ground.
8	NC	-	Not Used.
9	GND	P	Power ground.
10	GPG2	IO	General Purpose I/O, Port G[2].
11	GND	P	Power ground.
12	GPG4	IO	General Purpose I/O, Port G[4].
13	GPG5	IO	General Purpose I/O, Port G[5].
14	GND	P	Power ground.
15	GPG3	IO	General Purpose I/O, Port G[3].
16	GND	P	Power ground.
17	HPOUT_L	A	Connect to N32926 pin 102.
18	HPOUT_R	A	Connect to N32926 pin 101.
19	GPG7	IO	General Purpose I/O, Port G[7].
20	GPA11	IO	General Purpose I/O, Port A[11].
21	GND	P	Power ground.
22	RESETn	I	System reset signal input, active low.

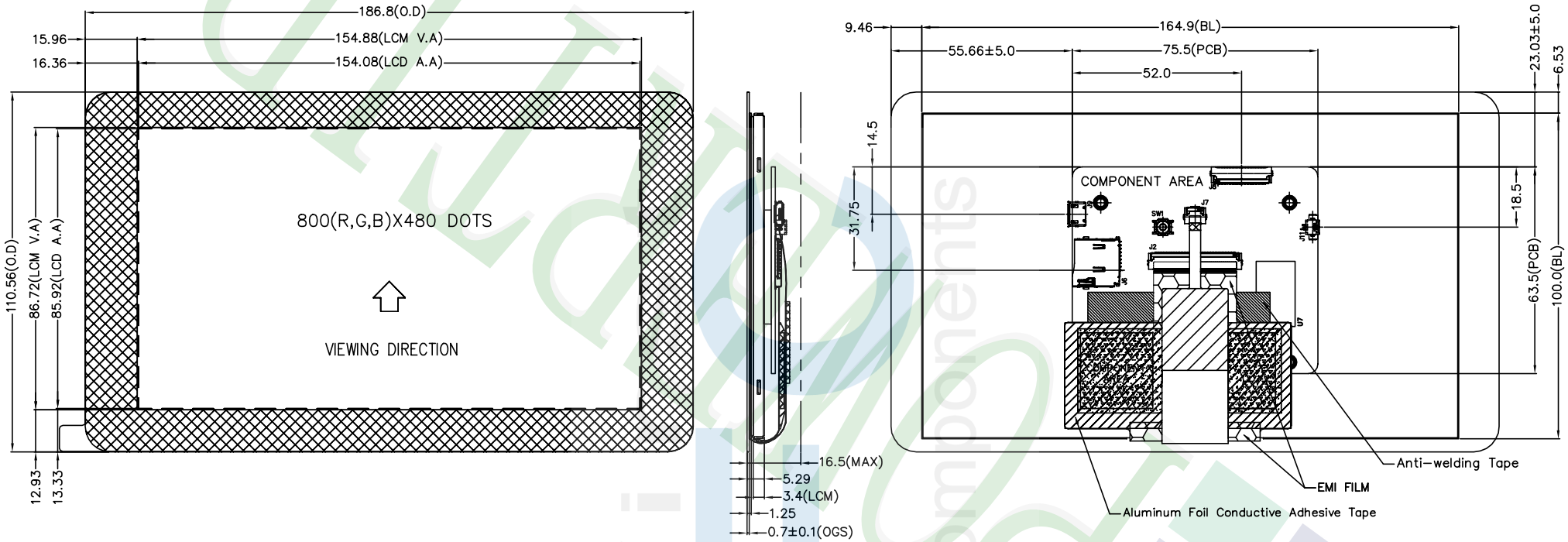
Pin No.	Symbol	Type	Function
23	UART_RXD	I	UART port, receiver signal.
24	UART_TXD	O	UART port, transmitter signal.
25	GND	P	Power ground.
26	VIN	P	DC 5.0V Power Supply.
27	VIN	P	DC 5.0V Power Supply.
28	NC	-	Not Used.
29	NC	-	Not Used.
30	GND	P	Power ground.

J9 --- USB 2.0 Device Micro USB type

Pin No.	Symbol	Type	DESCRIPTION
1	VUSB5V	P	USB +5.0V.
2	D-	DS	Data – (Data M).
3	D+	DS	Data + (Data P).
4	NC	-	Not Used.
5	GND	P	Ground.

J11 --- RTC POWER

Pin No.	Symbol	Type	Function
1	VBAT	P	Power Supply for RTC.
2	GND	P	Ground.



NOTES:

1. LCD TYPE: TFT LCD
2. LCD DISPLAY: POSITIVE/TRANSMISSIVE
3. The tolerance unless classified ±0.3mm
4. J6: OUPIIN-9004-BZ08C00A03T or Compatible
5. J8: ORMON XF2M-3015-1A or Compatible
6. J9: OUPIIN-8971-B05G00DPT OR Compatible
7. J11: Molex 532610271 or Compatible

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Nini	2019/11/25

PART NO: HNA800480T013IHC09

DRAWING NAME : LMD-HNA800480T013IHC09

TITLE: LCD MODULE DRAWING

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

Design	Nini	(3)	Surface		
Check	Marcs	Unit	MM	Material	
Approve	Daniel	Scale	1:1	Thickness	
		Page	1/1	Quantity	

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

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