# SPECIFICATIONS

| | | |
|---|---|---|
| CUSTOMER | : | CNO003 |
| SAMPLE CODE | : | SNA800480T033IHC07 |
| MASS PRODUCTION CODE | : | HNA800480T033IHC07 |
| SAMPLE VERSION | : | 01 |
| SPECIFICATIONS EDITION | : | 003 |
| DRAWING NO. (Ver.) | : | LMD-HNA800480T033IHC07 (Ver.002) |
| PACKAGING NO. (Ver.) | : | PKG-HNA800480T033IHC07 (Ver.001) |

**Customer Approved**

Date:

| Approved | Checked | Designer |
|---|---|---|
| 林裘中<br>Daniel Lin | 呂清溪<br>Marcs Lu | 王映喻<br>Brown Wang |

POWERTIP
2022.01.20
TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

**POWERTIP TECH. CORP.**

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first FC components
FIRST Components s.r.l.
www.first-components.com
technical@first-components.com
+39 0332 1888005

# 1. SPECIFICATIONS

## 1.1 Features

### Hardware

| | | |
|---|---|---|
| CPU | RISC Processor | N32926 (ARM926EJ-S)<br>64MB DDR2 SDRAM |
| Memory | On Board Flash | 1Gb NAND Flash<br>4GB eMMC (Option) |
| | External Storage | 1x Micro SD (max. 32G) |
| Display | Resolution | 800 x 480 (16bits RGB) |
| | Touch Panel | Projected Capacitive Touch |
| | Interface | Parallel RGB 16 bits |
| I/O | USB | 1x USB2.0 Device |
| | Serial | 1 x UART |
| Power Input | DC | 5.0V |

**Note1:**

1. Memory type (Option) will be setting by customer's request.
2. Touch Panel Type will be setting by customer's request.
3. Support PWM Signal Output. (5kHz, Duty Cycle: 256 Step)
4. Support JPEG Codec.
5. Support H.264 & MJPEG Codec
6. Support Video Data Processor (VPE)
7. Support RTC

**Note2:**

This product built-in Powertip communication protocol system firmware. It manipulates the GUI contents that generated by Powertip Graphic Editor software.(support maximum resolution up to 1024x600)

## 1.2 Mechanical Specifications

| Item | Standard Value | Unit |
|---|---|---|
| Outline Dimension | 131.0(W) x 90.5(L) x 14.0(H) MAX | mm |
| Active Area | 108.0(W) x 64.8(L) | mm |

## 1.3 Absolute Maximum Ratings

Ta = 25℃

| Item | Symbol | Condition | Min. | Max. | Unit |
|---|---|---|---|---|---|
| Power Supply | VIN | — | -0.3 | 6.0 | V |
| Operating Temperature | $T_{OP}$ | — | -20 | 70 | ℃ |
| Storage Temperature | $T_{ST}$ | — | -30 | 80 | ℃ |
| Humidity | HD | Ta=60 ℃ | 10 | 90 | %RH |

## 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 | - | 690 | - | mA |
| Power Consumption of System | PIN | VIN = 5.0V | - | 3.45 | - | W |
| IO High-Level input voltage | $V_{IH}$ | - | 2.0 | - | V3V3+0.3 | V |
| IO Low-Level input voltage | $V_{IL}$ | - | - | - | 0.8 | V |
| IO High-Level output voltage | $V_{OH}$ | - | 2.4 | - | - | V |
| IO Low-Level output voltage | $V_{OL}$ | - | - | - | 0.4 | V |

## 1.5 Optical Characteristics

**TFT LCD Module** VDD= 3.3 V, Ta=25℃

| Item | | Symbol | Condition | Min. | Typ. | Max. | unit | - |
|---|---|---|---|---|---|---|---|---|
| Response time | Tr+Tf | 25℃ | - | - | 30 | 45 | 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℃ θX , θY = 0° | 500 | 600 | - | - | Note 3 |
| Color of CIE Coordinate （With B/L & T/P） | White | X | | 0.24 | 0.29 | 0.34 | - | Note1 |
| | | Y | | 0.26 | 0.31 | 0.36 | | |
| | Red | X | | 0.51 | 0.56 | 0.61 | | |
| | | Y | | 0.28 | 0.33 | 0.38 | | |
| | Green | X | | 0.29 | 0.34 | 0.39 | | |
| | | Y | | 0.54 | 0.59 | 0.64 | | |
| | Blue | X | | 0.08 | 0.13 | 0.18 | | |
| | | Y | | 0.03 | 0.08 | 0.13 | | |
| Average Brightness Pattern=white display (With LCD & T/P)*1 | | IV | VCC=5.0V PWM="High" (Duty=100%) | 680 | 850 | - | cd/m2 | Note1 |
| Uniformity (With LCD & T/P)*2 | | △B | | 70 | - | - | % | Note1 |

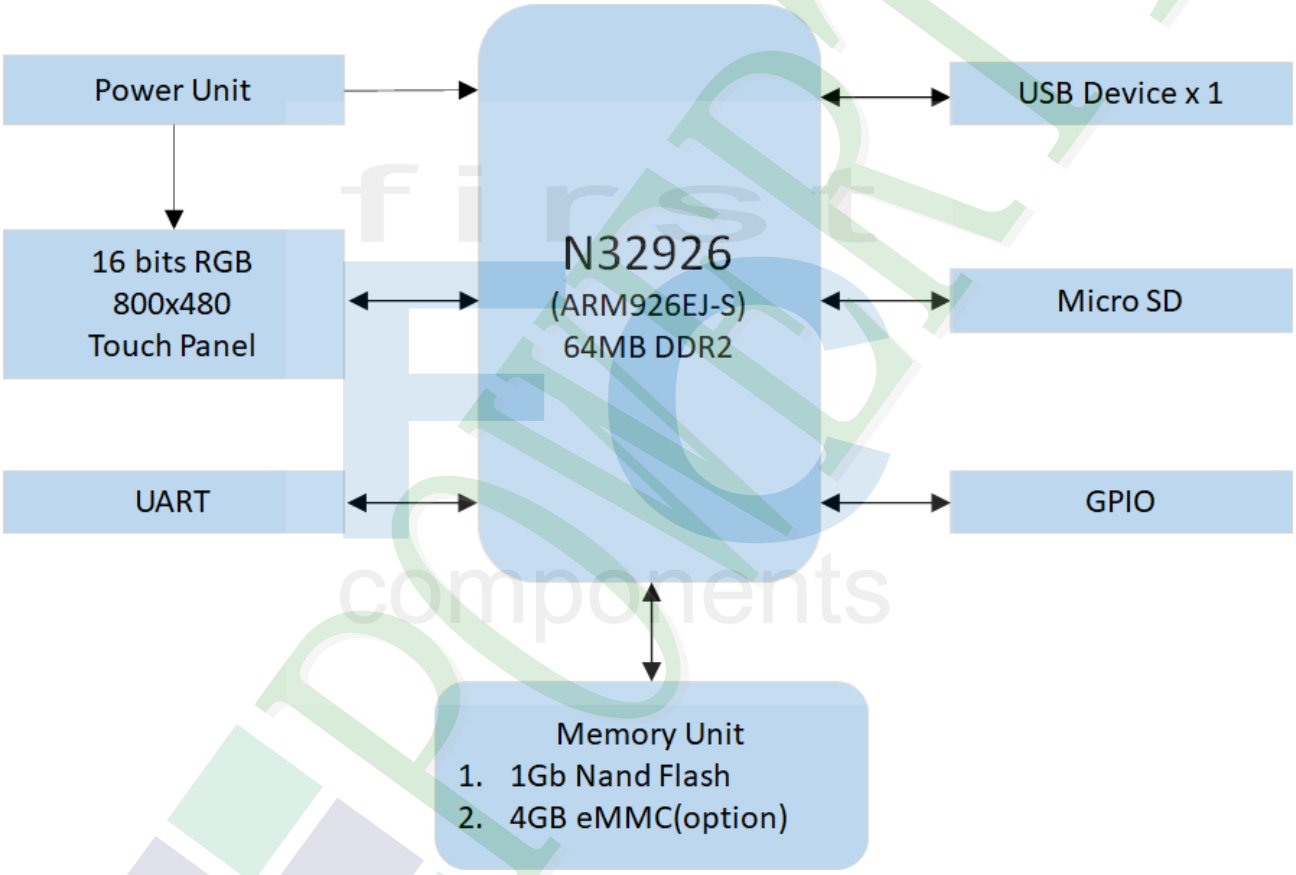
# 2. MODULE STRUCTURE

## 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. |
| 23 | UART_RXD | I | UART port, receiver signal. |

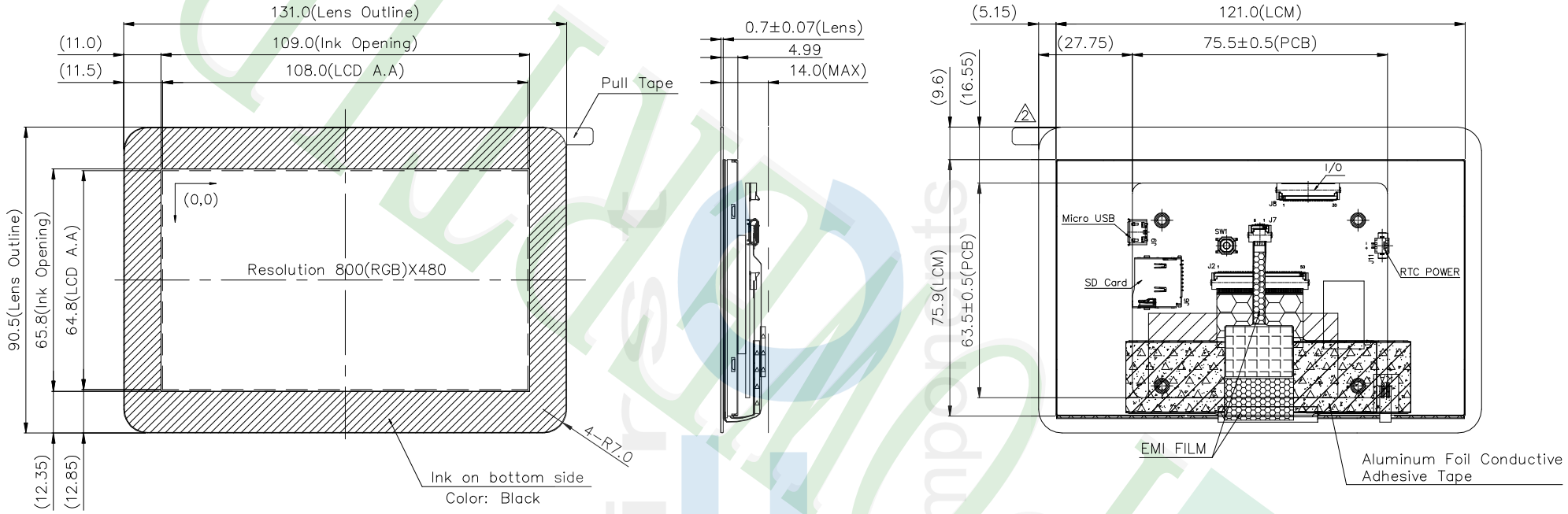
| Pin No. | Symbol | Type | Function |
|---|---|---|---|
| 24 | UART_TXD | O | UART port, transmitter signal. |
| 25 | GND | P | Power ground. |
| 26 | VIN | P | DC 5.0V Power Supply. |
| 27 | VIN | P | DC 5.0V Power Supply. |
| 28 | NC | - | Not Used. |
| 29 | NC | - | Not Used. |
| 30 | GND | P | Power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

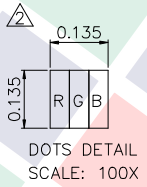
## J9 --- USB 2.0 Device Micro USB type

| 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.VIEW DIRECTION: 6 O'CLOCK
4.J8: OMRON XF2M-3015-1A or Compatible
5.J11: Molex 532610271 or Compatible
4.The tolerance unless classified ±0.3mm

| REV | REV BY | REVISER | DATE |
|---|---|---|---|
| 007 | | | |
| 006 | | | |
| 005 | | | |
| 004 | | | |
| 003 | | | |
| 002 | Modify DRAWING | Bright | 2021/12/15 |
| 001 | NEW DRAWING | Bright | 2021/04/06 |

PART NO: HNA800480T033IHC07

DRAWING NAME : LMD-HNA800480T033IHC07

TITLE: LCD MODULE DRAWING

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

| | | | | | |
|---|---|---|---|---|---|
| Design | Bright Chiang | (3) | Surface | | |
| Check | Marcs Lu | Unit | MM | Material | |
| Approve | Daniel Lin | Scale | FIT | 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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