

# DMG32240F028\_05WN

## Features:

- Powered by T5F0 ASIC, running DGUS II HMI platform.
- 2.8-inch, 240\*320 resolution, TN-TFT LCD.
- 20 pins, including UART2, SD card, Buzzer, touch panel interface.
- Supporting connected to 4-wire RTP, CTP, buzzer or speaker.



## 1. External interface



User interface

| PIN# | Definition1 | Function1                                                | Definition2 | Function2                                                                                                                                      |
|------|-------------|----------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | +5V         | Power supply, DC4.5-5.5V. IO are all at 3.3V CMOS level. |             |                                                                                                                                                |
| 2    | +5V         |                                                          |             |                                                                                                                                                |
| 3    | GND         |                                                          |             |                                                                                                                                                |
| 4    | GND         | GND                                                      |             |                                                                                                                                                |
| 5    | GND         |                                                          |             |                                                                                                                                                |
| 6    | 3.3V        |                                                          |             |                                                                                                                                                |
| 7    | TX2         | UART2                                                    |             |                                                                                                                                                |
| 8    | RX2         |                                                          |             |                                                                                                                                                |
| 9    | SD_D0       | When JIOS is in the air, SD card interface.              | TMS         | When JIOS is shorting circuit to ground, JTAG interface.                                                                                       |
| 10   | SD_D1       |                                                          | TCK         |                                                                                                                                                |
| 11   | SD_D2       |                                                          | TDI         |                                                                                                                                                |
| 12   | SD_D3       |                                                          | TDO         |                                                                                                                                                |
| 13   | SD_CLK      |                                                          | TX1         | Multiplexed UART1                                                                                                                              |
| 14   | SD_CMD      |                                                          | RX1         |                                                                                                                                                |
| 15   | TPY1        | 4-wire resistive touch screen interface                  | CTP_SDA     | Capacitive touch screen interface. When connected to CTP, the CTP_SDA and CTP_INT need to be pulled up to 3.3V by an external 4.7K resistance. |
| 16   | TPX1        |                                                          | CTP_INT     |                                                                                                                                                |
| 17   | TPY0        |                                                          | CTP_SCL     |                                                                                                                                                |
| 18   | TPX0        |                                                          | CTP_RST     |                                                                                                                                                |
| 19   | JIOS        | JTAG/IO choose                                           |             |                                                                                                                                                |
| 20   | BUZZ        | Buzzer drives output                                     | D/A         | Audio PWM DA output                                                                                                                            |

## 2. Specification parameters

### 2.1 Product parameters

|                                                                                          |                                                                                                                           |
|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Main Chip</b>                                                                         | T5F0                                                                                                                      |
| <b>User Interface</b>                                                                    | 20Pin_0.5mm FCC                                                                                                           |
| <b>FLASH</b>                                                                             | 8M Bytes                                                                                                                  |
| <b>UI Version</b>                                                                        | DGUS II                                                                                                                   |
| <b>Debugging Tools</b>                                                                   | HDL662SZ5 adapter board power supply                                                                                      |
| <b>Size</b>                                                                              | 2.8 inch                                                                                                                  |
| <b>Resolution</b>                                                                        | 240*320                                                                                                                   |
| <b>Active Area (AA)</b>                                                                  | 43.20mm (W)×57.60mm (H)                                                                                                   |
| <b>Viewing Angle</b>                                                                     | Normal viewing angle, typical value of 70°/70°/40°/30°(L/R/U/D)                                                           |
| <b>Backlight Service Life</b>                                                            | >10,000 hours                                                                                                             |
| <b>Brightness</b>                                                                        | 350nit                                                                                                                    |
| <b>Brightness Control</b>                                                                | 100-level brightness adjustment (Flickering may occur at 1%-30% of max brightness; not recommended for use in this range) |
| Note: Use dynamic screen saver to prevent afterimages from prolonged fixed page display. |                                                                                                                           |

## 2.2 Interface parameters

| Item                | Conditions                       | Min  | Typ    | Max     | Unit |
|---------------------|----------------------------------|------|--------|---------|------|
| Baud Rate           | User Set(Configure the CFG file) | 3150 | 115200 | 3225600 | bps  |
| Output Voltage(TXD) | Output 1                         | 3.0  | 3.3    | -       | V    |
|                     | Output 0                         | -    | 0      | 0.3     | V    |
| Input Voltage(RXD)  | Input 1                          | -    | -      | 3.3     | V    |
|                     | Input 0                          | 0    | -      | 0.5     | V    |
| Interface           | UART2: TTL;                      |      |        |         |      |
| Data Format         | UART2: N81;                      |      |        |         |      |

## 2.3 Electrical specifications

|                                    |                                |
|------------------------------------|--------------------------------|
| Rated Power                        | <2W                            |
| Operating Voltage                  | 4.5-5.5V, typical value of 5V. |
| Operating Current                  | 107mA@ 5V                      |
| Recommended power supply: 5V 1A DC |                                |

## 2.4 Operating environment

|                       |                                     |
|-----------------------|-------------------------------------|
| Operating Temperature | -10℃ to 60℃ (5V @ 60% RH)           |
| Storage Temperature   | -20℃ to 70℃                         |
| Operating Humidity    | 10%-90%RH, typical value of 60% RH. |

### 3. ESD Test

Test temperature: 25° C. Test humidity: 50%RH.

Test process: Place the product on the test bench fixture (approximately 15cm in height), and perform contact and air discharge tests on the smart LCM. Observe if any freezing, black or white screen, flickering, or rebooting occurs during the test.

Test conclusion: The product's ESD performance meets GB/T 17626.2 Class B standards.

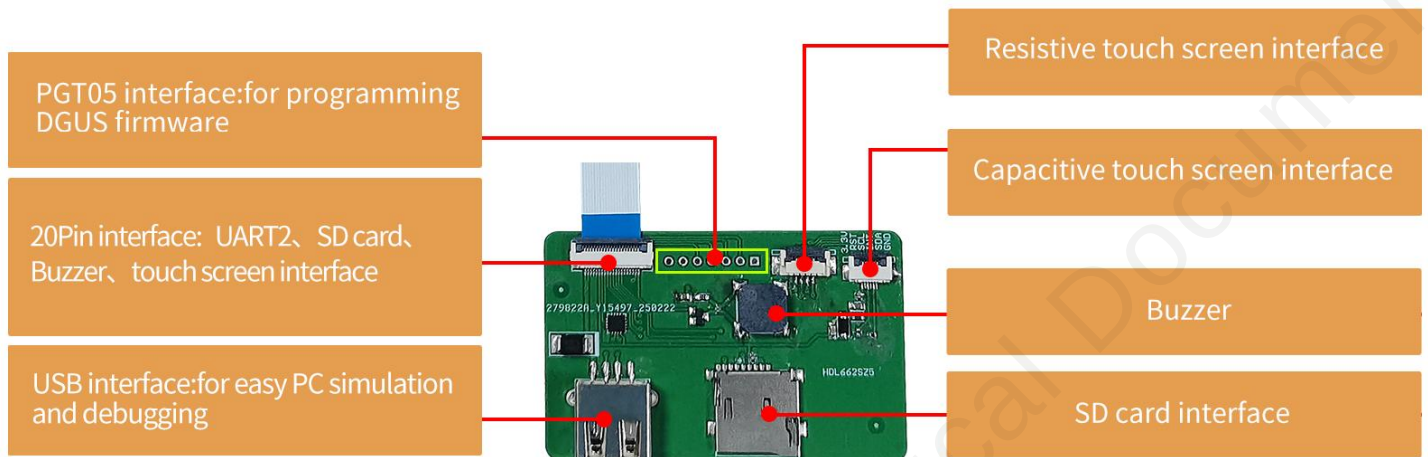
| Discharge Type | Discharge Value | Result           |
|----------------|-----------------|------------------|
| Air discharge  | ±8KV            | Normal operation |

## 4. Debug

It is recommended for new users of DWIN smart LCMs to purchase official accessories. For more details, please refer to customer service center.

Adapter board model: HDL662SZ5

Connecting cables: FCC20\_0.5 L=50mm(B03692)



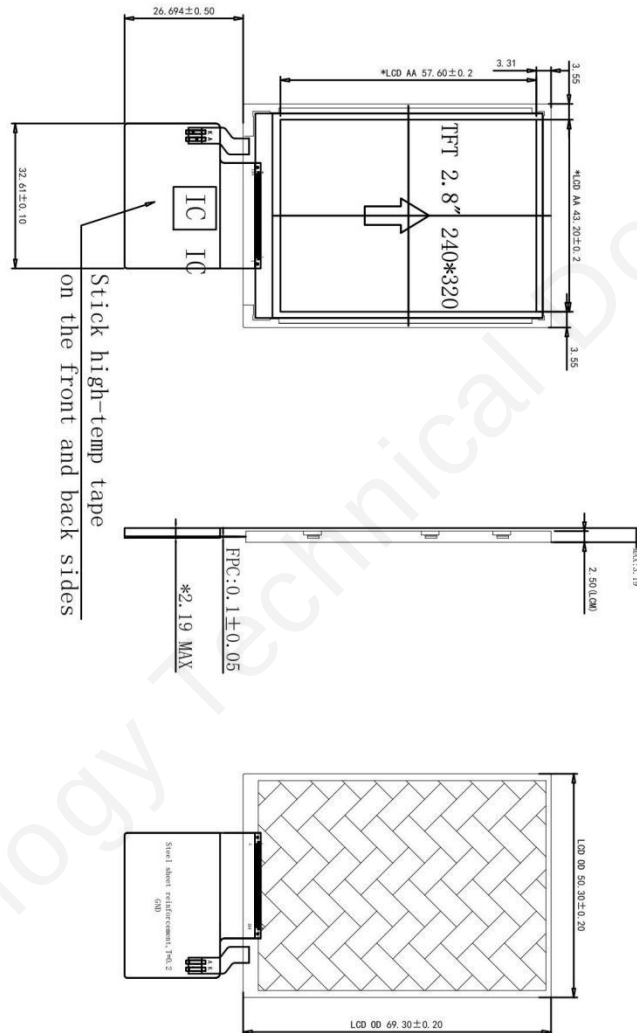
## 5. Packing capacity & dimension

| Dimension        |                                |       |                |               |
|------------------|--------------------------------|-------|----------------|---------------|
| Dimension        | 50.30W) ×69.30 (H) ×3.19(T) mm |       |                |               |
| Net Weight       | 20g                            |       |                |               |
| Packing Capacity |                                |       |                |               |
| Model            | Dimensions                     | Layer | Quantity/Layer | Quantity(Pcs) |
| Carton1:         | 220mm(L)×160mm(W)×47mm(H)      | 1     | 4              | 4             |
| Carton2:         | 250mm(L)×200mm(W)×80mm(H)      | 1     | 8              | 8             |
| Carton3:         | 320mm(L)×270mm(W)×80mm(H)      | 1     | 16             | 16            |
| Carton4:         | 415mm(L)×250mm(W)×125mm(H)     | -     | -              | 100           |

Front view

Side view

Back view



Stick high-temp tape  
on the front and back sides

LEDK ← → → → LEDA

LED CIRCUIT DIAGRAM:  
4\*3=12V, 20mA\*1=20mA

Socket Definition

| Pin# | Name   |
|------|--------|
| 1    | +5V    |
| 2    | +5V    |
| 3    | GND    |
| 4    | GND    |
| 5    | GND    |
| 6    | 3.3V   |
| 7    | TX2    |
| 8    | RX2    |
| 9    | SD_D0  |
| 10   | SD_D1  |
| 11   | SD_D2  |
| 12   | SD_D3  |
| 13   | SD_CLK |
| 14   | SD_CMD |
| 15   | TPY1   |
| 16   | TPX1   |
| 17   | TPY0   |
| 18   | TPX0   |
| 19   | JIDS   |
| 20   | BUZZ   |

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| REVISION RECORD | VER           | DATE | FILE NAME | CUSTOMER NAME     | DESIGN | RELEASE | SCALE          | TOLERANCES |
|-----------------|---------------|------|-----------|-------------------|--------|---------|----------------|------------|
| 1               | First Edition | V1-1 | 20230208  | DMG32240F028_05WN |        | SS0006  | ANGLES : ±0.1° |            |
| 2               |               |      |           |                   |        |         |                |            |
| 3               |               |      |           |                   |        |         |                |            |
| 4               |               |      |           |                   |        |         |                |            |
| 5               |               |      |           |                   |        |         |                |            |
| 6               |               |      |           |                   |        |         |                |            |



## 6. Revision records

| Rev | Revise Date | Content       | Editor  |
|-----|-------------|---------------|---------|
| 00  | 2025-07-10  | First Edition | Xu Ying |

Please contact us if you have any questions about the use of this document or our products, or if you would like to know the latest information about our products:

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Thank you all for continuous support of DWIN, and your approval is the driving force of our progress!

## Important Disclaimer

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