

# TFT DISPLAY SPECIFICATION



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**



## SPECIFICATION

**MODULE NO.: WF52ASZFSDHGV#**

### General Specifications

| Item                           | Dimension                               | Unit |
|--------------------------------|-----------------------------------------|------|
| Size                           | 5.2                                     | inch |
| Dot Matrix                     | 480 × 3(RGB) × 128                      | dots |
| Module dimension               | 180.0 × 75.8 × 23.94 (Max)              | mm   |
| Active area                    | 127.152 × 33.9072                       | mm   |
| Dot pitch                      | 0.0883 × 0.2649                         | mm   |
| LCD type                       | TFT, Normally White, Transmissive       |      |
| View Direction                 | 6 o'clock                               |      |
| Gray Scale Inversion Direction | 12 o'clock                              |      |
| Aspect Ratio                   | Bar Type                                |      |
| Backlight Type                 | LED, Normally White                     |      |
| Controller IC                  | TFP401                                  |      |
| Interface                      | HDMI (only for DVI)                     |      |
| Touch Panel                    | Projected capacitive touch panel (PCAP) |      |
| PCAP IC                        | GT911 or equivalent                     |      |
| PCAP Interface                 | USB                                     |      |
| PCAP FW Version:               | 0x99                                    |      |
| Surface                        | Glare                                   |      |

\*Color tone slight changed by temperature and driving voltage.

## Absolute Maximum Ratings

| Item                  | Symbol | Min | Typ | Max | Unit |
|-----------------------|--------|-----|-----|-----|------|
| Operating Temperature | TOP    | -20 | —   | +70 | °C   |
| Storage Temperature   | TST    | -30 | —   | +80 | °C   |

## Electrical Characteristics

Operating conditions:

| Item                   | Symbol | Condition | Min | Typ    | Max  | Unit |
|------------------------|--------|-----------|-----|--------|------|------|
| Supply Voltage For LCM | VDD    | —         | —   | 5      | —    | V    |
| Supply Current For LCM | IDD    | —         | —   | 1200   | 1800 | mA   |
| LED life time          | —      | —         | —   | 50,000 | —    | Hr   |

# Interface

## LCM PIN Definition(CON4)

| Pin | Symbol           | Function                               |
|-----|------------------|----------------------------------------|
| 1   | NC               | No connector                           |
| 2   | 5V               | Raspberry Pi:Power 5V                  |
| 3   | GPIO02           | Raspberry Pi:GPIO02                    |
| 4   | 5V               | Raspberry Pi:Power 5V                  |
| 5   | GPIO03           | Raspberry Pi:GPIO03                    |
| 6   | GND              | Raspberry Pi:GND                       |
| 7   | GPIO04           | Raspberry Pi:GPIO04                    |
| 8   | GPIO14           | Raspberry Pi:GPIO14                    |
| 9   | GND              | Raspberry Pi:GND                       |
| 10  | GPIO15           | Raspberry Pi:GPIO15                    |
| 11  | GPIO17           | Raspberry Pi:GPIO17                    |
| 12  | BL_E<br>(GPIO18) | Raspberry Pi:GPIO18 (Backlight Enable) |
| 13  | GPIO27           | Raspberry Pi:GPIO27                    |
| 14  | GND              | Raspberry Pi:GND                       |
| 15  | GPIO22           | Raspberry Pi:GPIO22                    |
| 16  | GPIO23           | Raspberry Pi:GPIO23                    |
| 17  | NC               | No connector                           |
| 18  | GPIO24           | Raspberry Pi:GPIO24                    |
| 19  | GPIO10           | Raspberry Pi:GPIO10                    |
| 20  | GND              | Raspberry Pi:GND                       |
| 21  | GPIO09           | Raspberry Pi:GPIO09                    |
| 22  | GPIO25           | Raspberry Pi:GPIO25                    |
| 23  | GPIO11           | Raspberry Pi:GPIO11                    |
| 24  | GPIO08           | Raspberry Pi:GPIO08                    |
| 25  | GND              | Raspberry Pi:GND                       |
| 26  | GPIO07           | Raspberry Pi:GPIO07                    |
| 27  | ID_SD            | Raspberry Pi:ID_SD                     |
| 28  | ID_SC            | Raspberry Pi:ID_SC                     |
| 29  | GPIO05           | Raspberry Pi:GPIO05                    |

|    |        |                     |
|----|--------|---------------------|
| 30 | GND    | Raspberry Pi:GND    |
| 31 | GPIO06 | Raspberry Pi:GPIO06 |
| 32 | GPIO12 | Raspberry Pi:GPIO12 |
| 33 | GPIO13 | Raspberry Pi:GPIO13 |
| 34 | GND    | Raspberry Pi:GND    |
| 35 | GPIO19 | Raspberry Pi:GPIO19 |
| 36 | GPIO16 | Raspberry Pi:GPIO16 |
| 37 | GPIO26 | Raspberry Pi:GPIO26 |
| 38 | GPIO20 | Raspberry Pi:GPIO20 |
| 39 | GND    | Raspberry Pi:GND    |
| 40 | GPIO21 | Raspberry Pi:GPIO21 |

**LCM PIN Definition(CON5)**

| Pin | Symbol           | Function                                          |
|-----|------------------|---------------------------------------------------|
| 1   | 3.3V             | TFT Module Power limit can only output 3.3V,100mA |
| 2   | 5V               | Raspberry Pi:Power 5V                             |
| 3   | GPIO02           | Raspberry Pi:GPIO02                               |
| 4   | 5V               | Raspberry Pi:Power 5V                             |
| 5   | GPIO03           | Raspberry Pi:GPIO03                               |
| 6   | GND              | Raspberry Pi:GND                                  |
| 7   | GPIO04           | Raspberry Pi:GPIO04                               |
| 8   | GPIO14           | Raspberry Pi:GPIO14                               |
| 9   | GND              | Raspberry Pi:GND                                  |
| 10  | GPIO15           | Raspberry Pi:GPIO15                               |
| 11  | GPIO17           | Raspberry Pi:GPIO17                               |
| 12  | BL_E<br>(GPIO18) | Raspberry Pi:GPIO18 (Backlight Enable)            |
| 13  | GPIO27           | Raspberry Pi:GPIO27                               |
| 14  | GND              | Raspberry Pi:GND                                  |
| 15  | GPIO22           | Raspberry Pi:GPIO22                               |
| 16  | GPIO23           | Raspberry Pi:GPIO23                               |
| 17  | 3.3V             | TFT Module Power limit can only output 3.3V,100mA |
| 18  | GPIO24           | Raspberry Pi:GPIO24                               |
| 19  | GPIO10           | Raspberry Pi:GPIO10                               |

|    |        |                     |
|----|--------|---------------------|
| 20 | GND    | Raspberry Pi:GND    |
| 21 | GPIO09 | Raspberry Pi:GPIO09 |
| 22 | GPIO25 | Raspberry Pi:GPIO25 |
| 23 | GPIO11 | Raspberry Pi:GPIO11 |
| 24 | GPIO08 | Raspberry Pi:GPIO08 |
| 25 | GND    | Raspberry Pi:GND    |
| 26 | GPIO07 | Raspberry Pi:GPIO07 |
| 27 | ID_SD  | Raspberry Pi:ID_SD  |
| 28 | ID_SC  | Raspberry Pi:ID_SC  |
| 29 | GPIO05 | Raspberry Pi:GPIO05 |
| 30 | GND    | Raspberry Pi:GND    |
| 31 | GPIO06 | Raspberry Pi:GPIO06 |
| 32 | GPIO12 | Raspberry Pi:GPIO12 |
| 33 | GPIO13 | Raspberry Pi:GPIO13 |
| 34 | GND    | Raspberry Pi:GND    |
| 35 | GPIO19 | Raspberry Pi:GPIO19 |
| 36 | GPIO16 | Raspberry Pi:GPIO16 |
| 37 | GPIO26 | Raspberry Pi:GPIO26 |
| 38 | GPIO20 | Raspberry Pi:GPIO20 |
| 39 | GND    | Raspberry Pi:GND    |
| 40 | GPIO21 | Raspberry Pi:GPIO21 |

Note1: The 3.3V supply current is limited; please pay special attention to use

#### HDMI

| Pin No. | Symbol | I/O | Function                      |
|---------|--------|-----|-------------------------------|
| 1       | Rx2+   | I   | +LVDS Differential Data Input |
| 2       | GND    | P   | Ground                        |
| 3       | Rx2-   | I   | -LVDS Differential Data Input |
| 4       | Rx1+   | I   | +LVDS Differential Data Input |
| 5       | GND    | P   | Ground                        |
| 6       | Rx1-   | I   | -LVDS Differential Data Input |
| 7       | Rx0+   | I   | +LVDS Differential Data Input |
| 8       | GND    | P   | Ground                        |
| 9       | Rx0-   | I   | -LVDS Differential Data Input |

|       |      |   |                                |
|-------|------|---|--------------------------------|
| 10    | RxC+ | I | +LVDS Differential Clock Input |
| 11    | GND  | P | Ground                         |
| 12    | RxC- | I | -LVDS Differential Clock Input |
| 13-14 | NC   | - | No connection                  |
| 15    | NC   | - | No connection                  |
| 16    | NC   | - | No connection                  |
| 17    | GND  | P | Ground                         |
| 18    | 5V   | P | Power Supply                   |
| 19    | NC   | - | No connection                  |

I: input, O: output, P: Power

Note 1: Only supports Raspberry Pi series

#### PCAP USB PIN Definition (CON3)

| Pin | Symbol | Function          |
|-----|--------|-------------------|
| 1   | 5V     | Power Supply (5V) |
| 2   | D-     | Data line -       |
| 3   | D+     | Data line +       |
| 4   | NC     | No connection     |
| 5   | GND    | Power Ground      |

Note 1: Only supports Raspberry Pi series

#### POWER-JACK

| Pin No. | Symbol | I/O | Function      |
|---------|--------|-----|---------------|
| 1       | 5V     | P   | Power Supply  |
| 2       | GND    | P   | Ground        |
| 3       | NC     | -   | No connection |

Contour Drawing

