

# TFT DISPLAY SPECIFICATION



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



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WEB: <https://www.winstar.com.tw> E-mail: sales@winstar.com.tw

### SPECIFICATION

**MODULE NO.: WF70A2TIFGDHGV#**

### General Specifications

| Item                           | Dimension                                | Unit |
|--------------------------------|------------------------------------------|------|
| Size                           | 7.0                                      | inch |
| Dot Matrix                     | 800 x RGB x 480(TFT)                     | dots |
| Module dimension               | 165.0(W) x 100(H) x 26.6(D)              | mm   |
| Active area                    | 154.08 x 85.92                           | mm   |
| Dot pitch                      | 0.0642 x 0.179                           | mm   |
| LCD type                       | TFT, Normally White, Transmissive        |      |
| View Direction                 | 12 o'clock                               |      |
| Gray Scale Inversion Direction | 6 o'clock                                |      |
| Aspect Ratio                   | 16:9                                     |      |
| Controller IC                  | TFP401 or equivalent                     |      |
| Backlight Type                 | LED, Normally White                      |      |
| TFT Interface                  | HDMI (only for DVI)                      |      |
| PCAP IC                        | ILI2130 or Equivalent                    |      |
| PCAP Interface                 | USB                                      |      |
| PCAP FW Version                | 0x07.0x00.0x00.0x00.0x65.0x90.0x00.0x01  |      |
| PCAP Resolution                | 16384*16384                              |      |
| Touch Panel                    | Projected Capacitive Touch Screen (PCAP) |      |
| 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    | —         | 4.9 | 5      | 5.1  | V    |
| Supply Current For LCM | IDD    | —         | —   | 830    | 1250 | mA   |
| LED Life Time          | —      | —         | —   | 50,000 | —    | Hr   |

# Interface

## 1. LCM PIN Definition(CON6)

| Pin | Symbol | Function                               | Remark |
|-----|--------|----------------------------------------|--------|
| 1   | NC     | No connection                          |        |
| 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  | 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 connection                          |        |
| 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 |  |

## 2. LCM PIN Definition (CON5)

| Pin | Symbol | Function                                          | Remark |
|-----|--------|---------------------------------------------------|--------|
| 1   | 3.3V   | TFT Module Power limit can only output 3.3V,100mA | Note1  |
| 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  | 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 | Note1  |
| 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

**3. DVI**

| Pin No. | Symbol | I/O | Function                        | Remark |
|---------|--------|-----|---------------------------------|--------|
| 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      | SCL    | I/O | DDC(Data Display Channel) Clock |        |
| 16      | SDA    | I/O | DDC(Data Display Channel) Data  |        |
| 17      | GND    | P   | Ground                          |        |
| 18      | 5V     | P   | Power Supply                    |        |
| 19      | Detect | I/O | Hot plug detect                 |        |

I: input, O: output, P: Power

**4. USB**

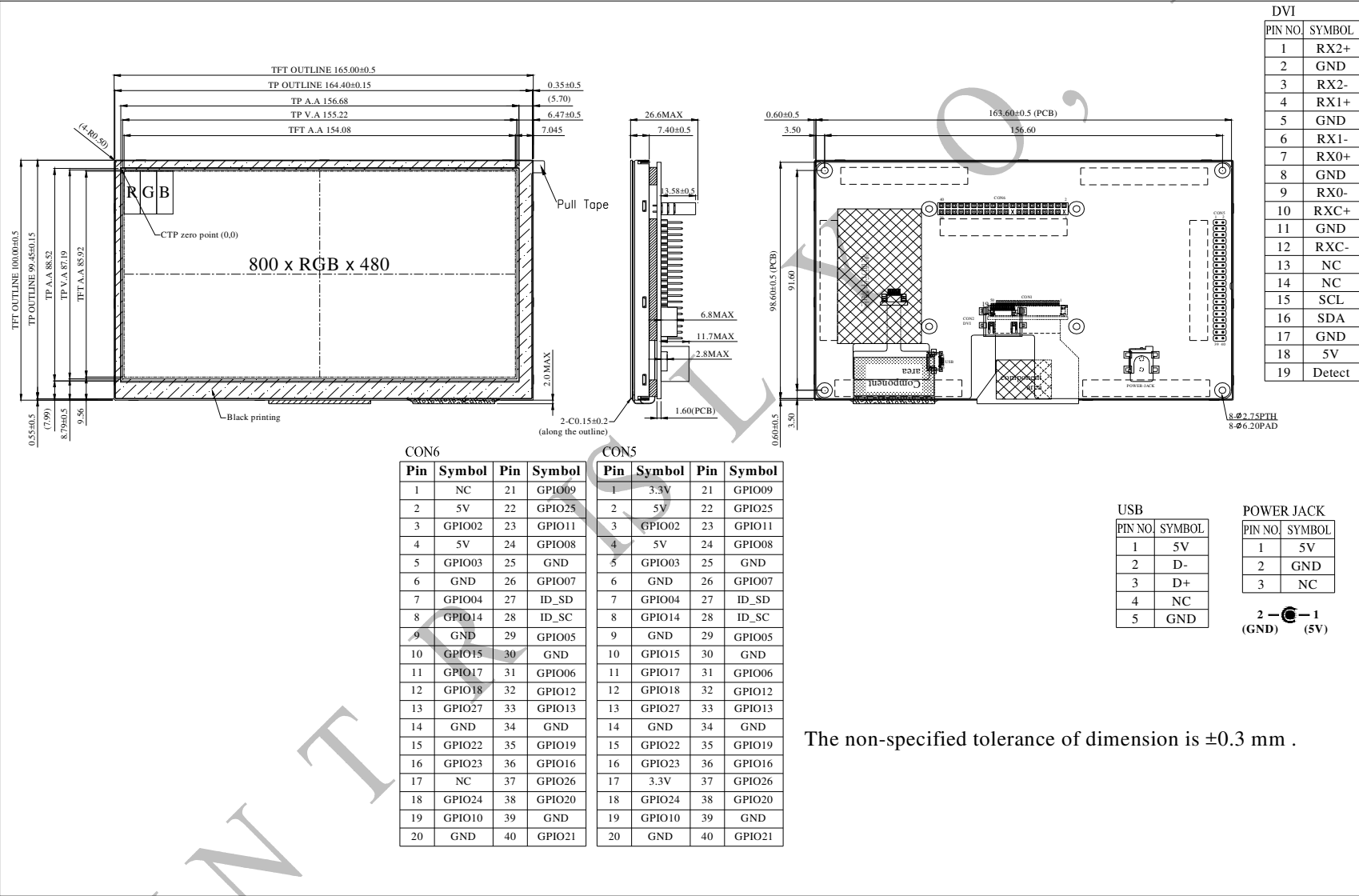
| Pin No. | Symbol | I/O | Function      | Remark |
|---------|--------|-----|---------------|--------|
| 1       | 5V     | P   | Power Supply  |        |
| 2       | D-     | I/O | USB Data -    |        |
| 3       | D+     | I/O | USB Data +    |        |
| 4       | NC     | -   | No connection |        |
| 5       | GND    | P   | Ground        |        |

**5. POWER JACK**

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

\* Display need to use power jack to power on due to HDMI port not able to fulfill the supply current

Contour Drawing



The non-specified tolerance of dimension is  $\pm 0.3$  mm .