# SMART DISPLAY SPECIFICATION




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# SPECIFICATION

## MODEL NO. : WL0F00039000FGFAASA00-FC

# Summary

**3.9 Inch Smart Display Feature**

1. Input voltage dynamic range 5V to 48V, typical voltage 5V.
2. Self-testing after booting function.
3. UART communication interface.
4. Supports Proprietary UART protocol, default baud rate at 115200Kbps.
5. Built in flash memory 16MB, store the font and Object Dictionary Data.
6. Support capacitive touch panel (CTP).
7. Build in buzzer and can be controlled by Master Device.
8. Demo set HOST can be used on multiple platforms, such as Computer (with USB to UART Dongle), MCU, Raspberry Pi.
9. GPIO PIN support

# Product information

## General information

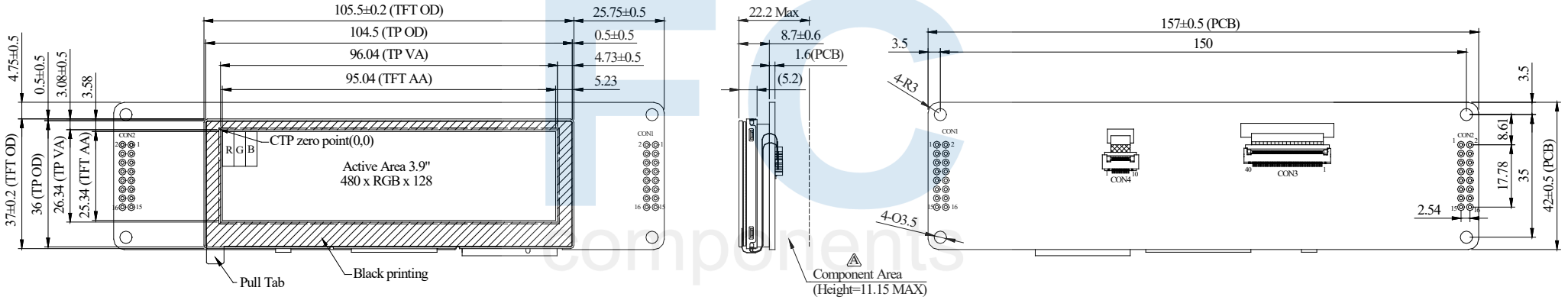
| Item | Standard Value | Unit |
|---|---|---|
| Operating voltage | 5V~ 48V dynamic | Vdc |
| Communication Interface | UART | - |
| MCU | STM32F750 | N/A |
| Flash Memory | 16 | MB |
| LCD display size | 3.9 | inch |
| Dot Matrix | 480x128 x RGB (TFT) | dot |
| Module dimension | 157.0(W) x 42.0(H) x 16 | mm |
| Active area | 95.04 x 25.34 | mm |
| Pixel pitch | 0.198 x 0.198 | mm |
| Brightness | Min: 700; Typ: 800 | $cd/m^2$ |
| LCD type | TFT, Normally Black, Transmissive | |
| Viewing Angle | 85/85/85/85 | |
| Aspect Ratio | Bar Type | |
| Touch Panel | Projected Capacitive Touch Panel | |
| Surface | Glare | |

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# Contour Drawing

| CON1 ⚠ | | | |
|---|---|---|---|
| SYMBOL | PIN | | SYMBOL |
| VIN | 1 | 2 | GND |
| GND | 3 | 4 | Reserve |
| NC | 5 | 6 | Reserve |
| NC | 7 | 8 | VBUS |
| GND | 9 | 10 | UART_RX |
| NC | 11 | 12 | UART_TX |
| NC | 13 | 14 | GND |
| VIN | 15 | 16 | GND |

| CON2 | | | |
|---|---|---|---|
| SYMBOL | PIN | | SYMBOL |
| IO_0 | 1 | 2 | +3V3 |
| IO_1 | 3 | 4 | SWCLK |
| IO_2 | 5 | 6 | GND |
| IO_3 | 7 | 8 | SWDIO |
| IO_4 | 9 | 10 | NRST |
| IO_5 | 11 | 12 | GND |
| IO_6 | 13 | 14 | WKUP |
| IO_7 | 15 | 16 | BOOT0 |




The non-specified tolerance of dimension is ±0.3mm.

# Absolute Maximum Ratings

| Item | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Temperature | TOP | -30 | — | +80 | ℃ |
| Storage Temperature | TST | -40 | — | +90 | ℃ |

# Electrical Characteristics

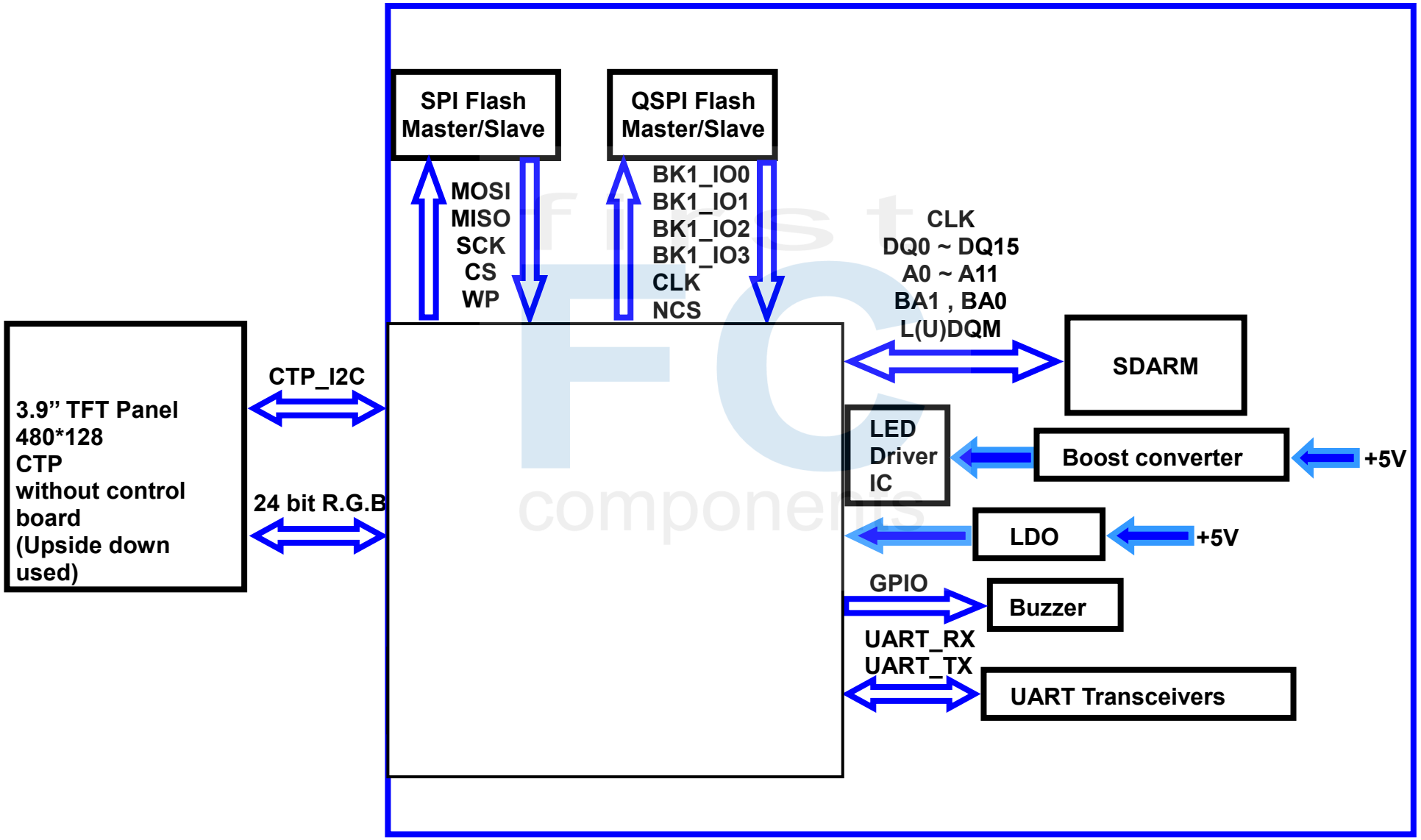
| Item | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Supply Voltage For Analog | VCC | 5 | 5 | 48 | V |
| Interface Operation Voltage | ICC | 420 | 460 | 50 | mA |

# BOM

| Item | Description |
|---|---|
| LCM | WF39-480128FD#0SPW3-FC |
| PCBA | SV10003R900FA00N0102 |

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# Block diagram



# Interface

**CN1 definition:**

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | VIN | Power +5V~48V | Input |
| 2 | GND | Power supply GND input | GND |
| 3 | GND | Power supply GND input | GND |
| 4 | Reserve | Differential signal D- | I/O |
| 5 | Reserve | - | - |
| 6 | Reserve | Differential signal D+ | I/O |
| 7 | Reserve | - | - |
| 8 | VBUS | 5V output for UART interface | Output |
| 9 | GND | Power supply GND input | GND |
| 10 | UART_RX | UART RX interface | I/O |
| 11 | Reserve | Power supply GND input | GND |
| 12 | UART_TX | UART TX interface | I/O |
| 13 | Reserve | - | - |
| 14 | GND | UART5_TX | I/O |
| 15 | VIN | - | - |
| 16 | Reserve | UART5_RX | I/O |

I/O allow below 3.3V input. If exceeding 3.3V may cause MCU damage.

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**CN2 definition:**

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | IO_0 | UART6_TX | I/O |
| 2 | +3V3 | Power supply 3V3 input | Input |
| 3 | IO_1 | UART6_RX | I/O |
| 4 | SWCLK | CLK pin for JTAG interface | Input |
| 5 | IO_2 | - | - |
| 6 | GND | Power supply GND input | GND |
| 7 | IO_3 | - | - |
| 8 | SWDIO | Data pin for JTAG interface | I/O |
| 9 | IO_4 | - | - |
| 10 | NRST | Reset pin for JTAG interface | Input |
| 11 | IO_5 | - | - |
| 12 | GND | Wire trace Output for JTAG interface | I/O |
| 13 | IO_6 | Power supply GND input | GND |
| 14 | WKUP | Power supply GND input | GND |
| 15 | IO_7 | Power supply 5V output | Output |
| 16 | BOOT0 | Buzz | Output |

I/O allow below 3.3V input. If exceeding 3.3V may cause MCU damage.

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