Technical Datasheet - 5.0" TFT LCD Display Module

1. Product Overview

The 5.0-inch TFT LCD module is designed for smart home interfaces and embedded control panels. It features high resolution, wide viewing angles, stable performance, and optional touch functionality (capacitive or resistive). It is suitable for indoor wall-mounted applications requiring reliable display and interaction.

2. Key Features

Display Size: 5.0 inch (diagonal)

Resolution: 800 x 480 (RGB)

Interface: RGB / MIPI / SPI (optional)

Brightness: 500-800 cd/m² (configurable)

Viewing Angle: IPS / TN (optional)

Touch Panel: Capacitive / Resistive (optional)

Operating Voltage: 3.3V (typical)

Backlight Lifetime: >=30,000 hours

Operating Temperature: -20 degreesC to +70 degreesC

Storage Temperature: -30 degreesC to +80 degreesC

Customization: FPC, cover lens, touch bonding, logo printing

3. Electrical Characteristics

Power Supply Voltage: 3.3V

Logic Input Voltage: 3.3V / 1.8V (depends on driver)

Current Consumption: Refer to spec sheet for exact value

4. Optical Characteristics

Brightness: 500-800 cd/m²

Contrast Ratio: >=500:1

Viewing Angle: IPS (80/80/80/80 degrees) or TN

Response Time: <=25 ms

Display Mode: Normally White / Transmissive

Color Depth: 16.7M (24-bit RGB)

5. Mechanical Characteristics

Outline Dimensions: [To be filled from CAD drawing]

Active Area: 108.0 x 64.8 mm

Thickness: [Depends on TP and backlight]

Mounting Type: CTP+LCD module (optional OCA)

6. Touch Panel (Optional)

Capacitive Touch Panel:

- Multi-point support (up to 5 points)

- I2C interface

- High sensitivity and transparency

- Cover glass optional (0.7-1.1mm)

Resistive Touch Panel:

- 4-wire or 5-wire available

- Simple interface and low power

- Suitable for stylus/finger operation

7. Interface Options

RGB 24-bit: Standard parallel RGB for embedded systems

MIPI DSI: High-speed serial interface for compact design

SPI/MCU: Low pin-count control for simple applications

8. Application Scenarios

Smart Home Control Panels

Wall-Mounted Thermostats

Security & Alarm System Displays

Touch-enabled IoT Interfaces

Industrial Embedded Devices

9. Customization Options

FPC length, shape, and pinout

Touch bonding: OCA/Lamination

Cover glass printing, logo & hole

UI screen preview and integration support

Brightness adjustment and polarizer choice

10. Compliance & Quality

RoHS Compliant

ISO9001 Certified Production

100% Aging Test Before Delivery

ESD & EMI Protected Design