Taidacent ZC-1019fingerprintmodule-0518

Taidacent 1019 Biometric Fingerprint Recognition Collector User Manual

Model: ZC-1019fingerprintmodule-0518

1. Introduction

The Taidacent 1019 Biometric Fingerprint Recognition Collector is an advanced semiconductor fingerprint module designed for reliable fingerprint collection, processing, storage, and comparison. It integrates the ID809 high-performance processor and a semiconductor fingerprint sensor, utilizing the IDfinger6.0 fingerprint algorithm for enhanced speed and accuracy. This module is suitable for various fingerprint identification applications, offering a compact design with a distinctive ring-shaped breathing light.

2. Product Overview

The ID1019D module provides essential fingerprint functions including entry, verification, query, deletion, and collection of basic fingerprint images. It communicates via standard UART protocol and is designed to work with an SDK development kit to facilitate integration into various systems. The module features a durable construction with high static pressure resistance and strong anti-interference capabilities, ensuring high security and performance with low power consumption.

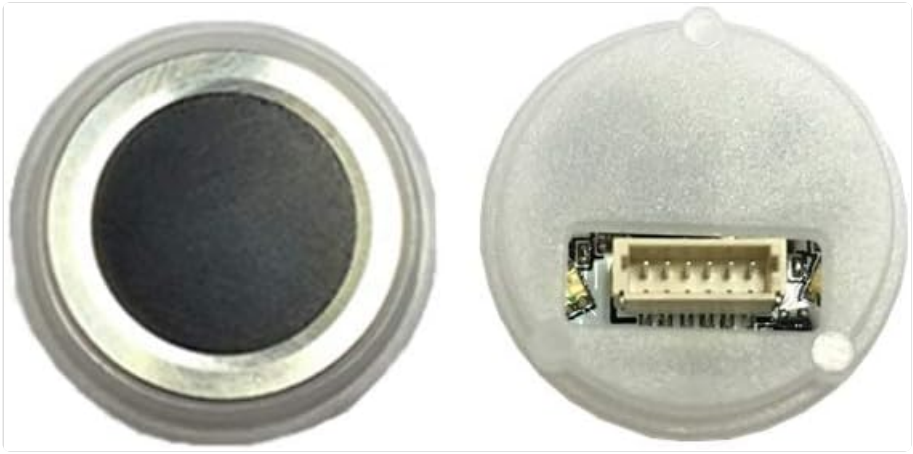

Figure 2.1: Top-down view of the Taidacent 1019 fingerprint sensor module.

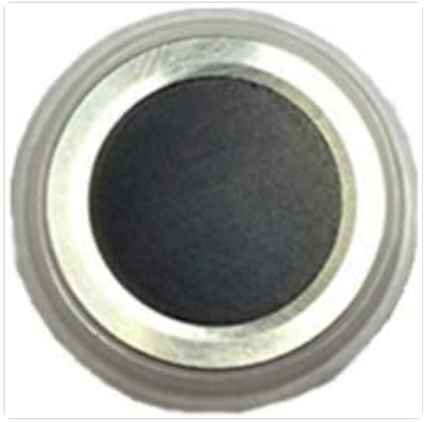

Figure 2.2: The fingerprint module illuminated with a blue LED light, indicating operational status.

3. Specifications

- **Stored Fingerprints:** 80 or 200 (optional)
- **1:1 Verification Time:** Approximately 300-400ms
- **Communication Method:** UART
- **Sensor Type:** Active capacitive
- **Pixel Resolution:** 508dpi
- **Sensor Pixels:** 160x160
- **Fingerprint Detection Area:** 8.0mm x 8.0mm
- **Fingerprint Entry & Matching:** 360° capability
- **Outer Frame Size:** 12.8mm diameter
- **Scratch Resistance:** 4H
- **Antistatic Level:** ±15kV
- **Working Environment:** -40°C to 60°C, less than 90% RH
- **PCB Diameter:** 21mm
- **Installation Diameter:** 19mm
- **Height:** 5mm
- **Package Dimensions:** 4 x 3 x 0.2 inches

- **Item Weight:** 0.16 ounces
- **Item Model Number:** ZC-1019fingerprintmodule-0518

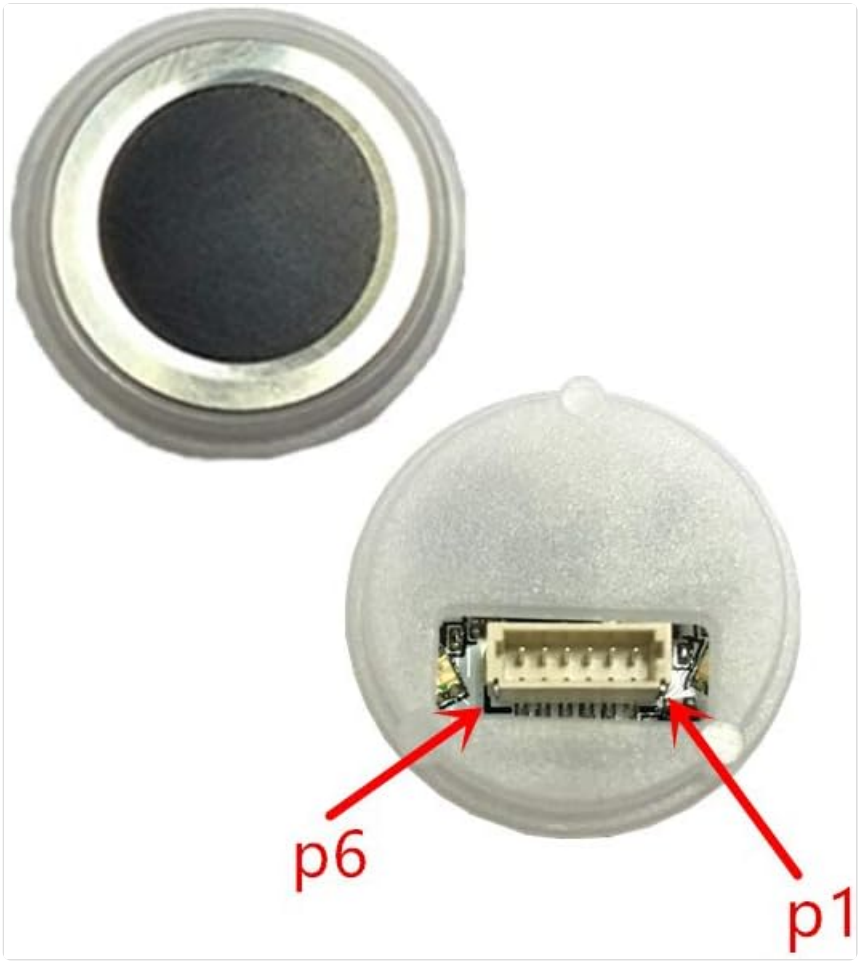

Figure 3.1: Technical drawing illustrating the top, side, and bottom views with precise dimensions of the module.

4. Setup

The Taidacent 1019 module communicates with a host system via UART. Proper connection and software integration are crucial for operation.

4.1 Physical Connection

Connect the module to your host system using the provided 6P wire. Refer to the pinout diagram for correct connections. Pins P1 and P6 are indicated on the module's PCB.

Figure 4.1: Top and bottom views of the module, highlighting the P1 and P6 pin connections for integration.

4.2 Software Integration

The module requires an SDK development kit for full functionality. Detailed communication protocols and SDK usage instructions are typically provided in a separate document titled "Fingerprint Module Communication Protocol." This protocol outlines how to send commands and receive data for fingerprint operations.

5. Operating Instructions

Once the module is physically connected and the SDK is integrated, you can perform various fingerprint management tasks. The typical workflow involves enrolling fingerprints, verifying them, and managing stored templates.

5.1 Basic Operations

- **Fingerprint Entry (Enrollment):** Captures and stores a new fingerprint template.
- **Fingerprint Verification:** Compares a live fingerprint scan against a stored template (1:1 matching).
- **Fingerprint Identification:** Compares a live fingerprint scan against all stored templates (1:N matching).
- **Fingerprint Query:** Retrieves information about stored fingerprints.
- **Fingerprint Deletion:** Removes specific fingerprint templates from storage.
- **Image Processing:** The SDK allows for processing of raw fingerprint images.
- **Template Generation:** Creates fingerprint templates from captured images.

5.2 Software Interface Example

A typical software interface for managing the fingerprint module might include options for opening/closing the device, setting communication parameters (e.g., COM port, baud rate), enrolling new fingerprints, verifying existing ones, and managing templates. The interface also allows for viewing captured fingerprint images and adjusting settings.

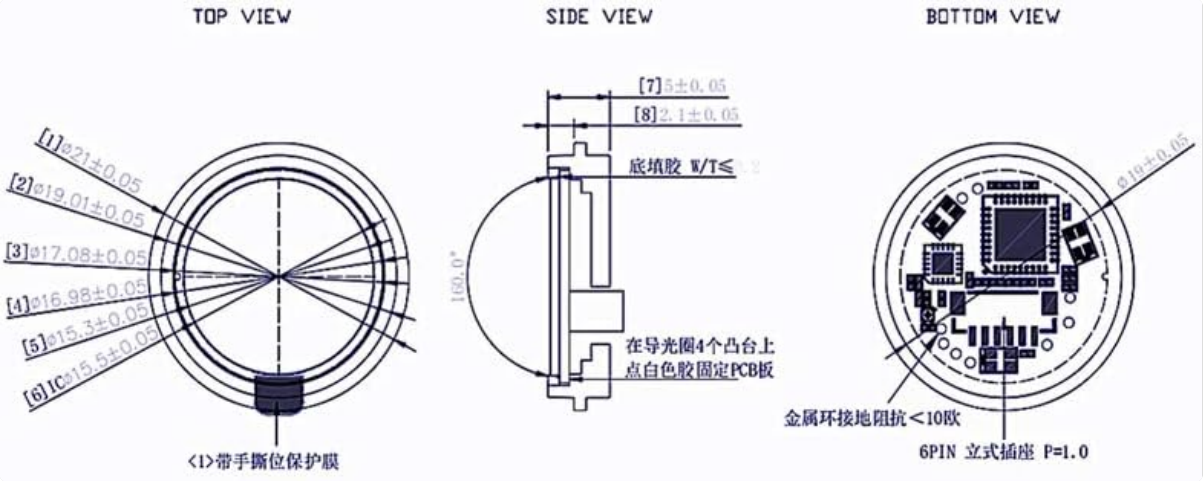

Figure 5.1: Example of a software interface (NOEM Host Ver 3.17.1) used for managing fingerprint operations, including enrollment, verification, and device settings.

6. Maintenance

To ensure the longevity and optimal performance of your Taidacent 1019 Biometric Fingerprint Recognition Collector, follow these maintenance guidelines:

- **Cleaning:** Keep the sensor surface clean and free from dust, dirt, and moisture. Use a soft, lint-free cloth for cleaning. Avoid abrasive materials or harsh chemicals.
- **Environmental Conditions:** Operate and store the module within the specified working environment temperature (-40°C to 60°C) and humidity (less than 90% RH). Avoid extreme temperatures or high humidity.
- **Handling:** Handle the module with care to prevent physical damage, especially to the sensor surface and pin connections. The sensor has a scratch resistance of 4H, but excessive force can still cause damage.
- **Static Discharge:** The module has an antistatic level of ±15kV. However, always take precautions against electrostatic discharge (ESD) when handling the module, especially during installation.

7. Troubleshooting

If you encounter issues with your Taidacent 1019 module, consider the following troubleshooting steps:

- **No Power/No Response:**
    - Verify that the module is correctly connected to the power supply and that the power source is

active.
    - Check all cable connections for proper seating and integrity.

- **Communication Errors:**
    - Ensure the UART communication parameters (baud rate, data bits, stop bits, parity) are correctly configured in your host system and match the module's settings.
    - Confirm the correct COM port is selected if using a serial connection.
    - Refer to the "Fingerprint Module Communication Protocol" for detailed communication specifications.

- **Fingerprint Recognition Issues:**
    - Ensure the sensor surface is clean and free from obstructions.
    - Instruct users to place their finger flat and centered on the sensor, covering the entire detection area.
    - If enrollment fails repeatedly, try enrolling the same finger multiple times or try a different finger.
    - Check the quality of the captured fingerprint image via the SDK or software interface.

- **Software Malfunctions:**
    - Ensure your SDK and application software are up-to-date.
    - Restart the application and the host system.

For persistent issues, consult the detailed technical documentation provided with the SDK or contact Taidacent technical support.

8. Warranty and Support

Specific warranty information for the Taidacent 1019 Biometric Fingerprint Recognition Collector is not provided in this manual. Please refer to your purchase documentation or contact your vendor for warranty details.
For technical support, documentation, or further assistance, please contact Taidacent directly or visit their official website. Ensure you have your product model number (ZC-1019fingerprintmodule-0518) available when seeking support.