



User Manual

SLK20M Embedded Optical Fingerprint Module

Version: 1.0

Date: October 2021

Preface

Thank you for choosing our product SLK20M Embedded Optical Fingerprint Module. Please read this User Manual carefully before use.

We strongly believe that Embedded Optical Fingerprint Module brings you and your customers an excellent user experience and will uplift your Brand Image and the Management to a higher level.

Considering the stability of the product quality and service life, please do not intentionally dismantle the product or modify the system settings without professional instructions. For further queries, please contact the local dealers.

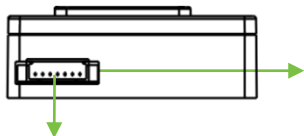
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1. Introduction

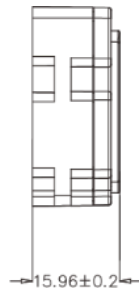
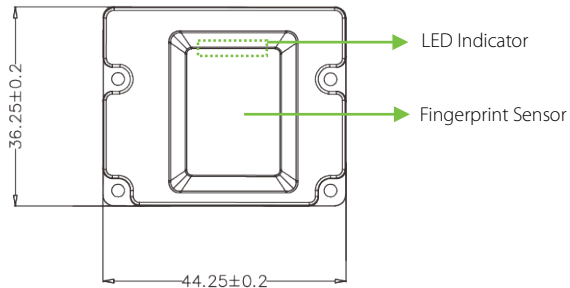
SLK20M, as one of the smallest embedded optical modules in the world combines a 2-megapixel image sensor with an ARM9 processor for powerful performance. With the sophisticated design, it can be flexibly integrated with various system applications without any additional accessories.

2. Dimensions



Connector Pin 1

PIN	1	2	3	4	5	6	7
Detail	+5V	GND	Shield	USB D-	USB D+	UART	UART



3. Technical Specifications

Sensor Type	Optical
CPU	280MHz DSP
Flash	32 MB
SoC	RTOS
Image Quality	2-megapixel CMOS
Encrypted Fingerprint Data	Yes
Sunlight Operation	Yes, Dark Field and Automatic Gain / Exposure
Water Splash Proof	Yes
Power Consumption	5V: 200mA Scanning; 5V: 60mA idle (waiting for finger)
Fingerprint Liveness Detection	Yes
LED	White
Product Certifications	FCC, CE, RoHS
Power Voltage	5V (USB) / 3.3V (TTL-RS232)
Power Current	200mA
Communication	UART (115,200 bps / TTL3.3V) / USB 2.0

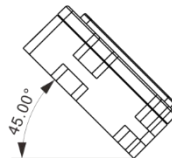
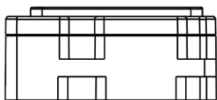
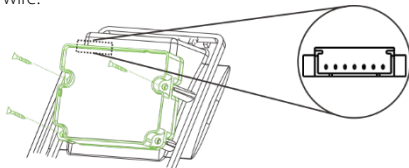
Interface Socket	Molex 51021- 0700 (7 pin; 1.25 mm)
Effective Collecting Area	15.24 * 20.32 mm (FAP20)
Collecting Area	16.5 * 23 mm
Dimensions (L*W*H)	36.2 * 44.2 * 15.85mm
Template	ZKFinger V10.0 ; ISO19794-2 ; ANSI-378
Template Size	1-4KB (ZKFinger V10.0); 1,568 B (ISO 19794-2)
Capacity	2,000 templates
Grayscale	256
Weight	0.032kg
Operating Environment	-20 °C ~ +50 °C; 90% r.h.
ISO/ANSI Support	ISO-19794-2/4 ANSI-378

4. Technical Features

- Easy integration with smallest size without any extra accessories
- Stable operation under strong light source
- Durable glass touch surface
- Quick scan with dry, wet and rough fingerprints

5. Installation on Host (Devices)

Install the module on the device, as shown below, by tightening the four screws in the holes and linking the holder to the wire.

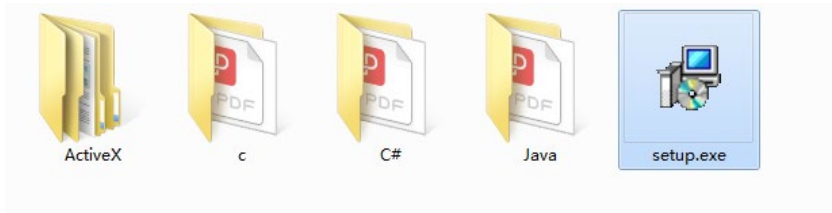


Note: In order to ensure good and convenient fingerprint scanning, it is recommended to install the module on the wall horizontally or at an angle of 0-45 degrees.

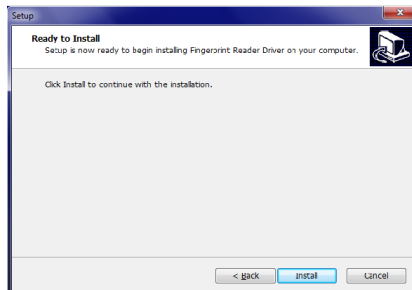
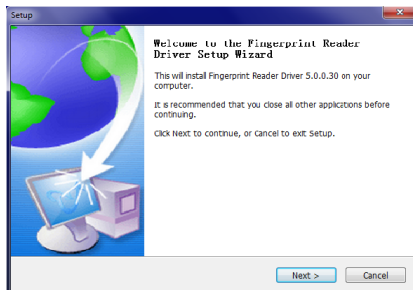
6. Demo Testing Procedure

It is required that the first time Users need to install the Device Driver before using the Fingerprint Scanner, and the process is as follows: (If the Users have already installed the Device Driver of SLK ID series Fingerprint Scanner, they can directly test without re-installing it.)

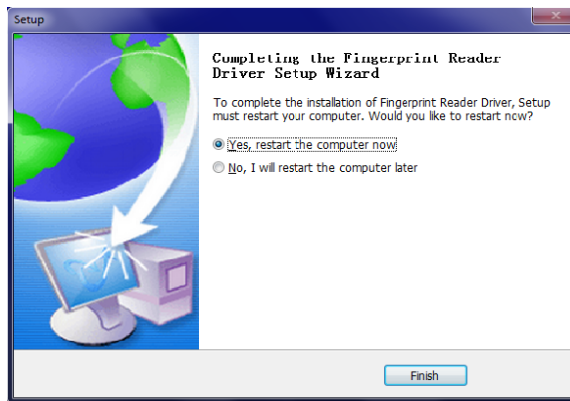
1. Download the ZKFinger SDK compressed package and then double-click the **setup.exe** file to open.



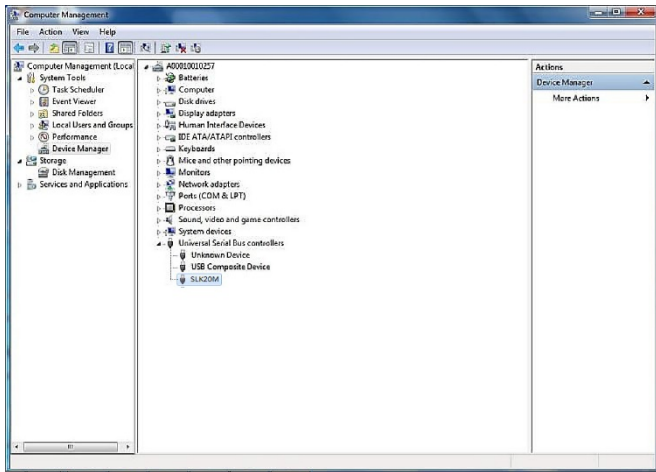
2. On the Setup Wizard, click **Next** and then click **Install** to install the driver.




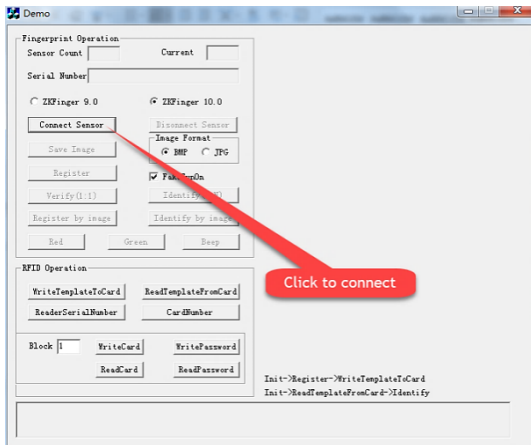
3. After the completion of the Driver installation click **Finish**.



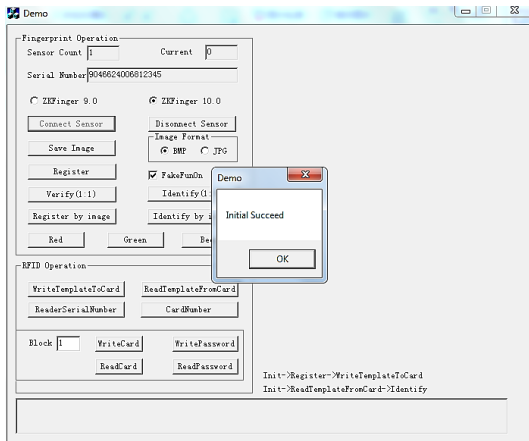
4. Connect the Fingerprint Scanner Device to the Computer and go to **Control Panel** and open **Device Manager**. If the driver is installed successfully, the Device Name will be displayed on the Computer Management window.



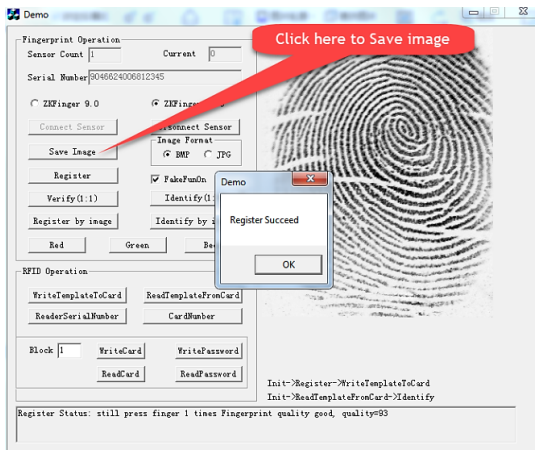
5. Once after the installation of the Device driver, open  **Demo** interface from ZKFinger SDK compressed package, and then click **Connect Sensor** to connect with the Fingerprint Scanner.



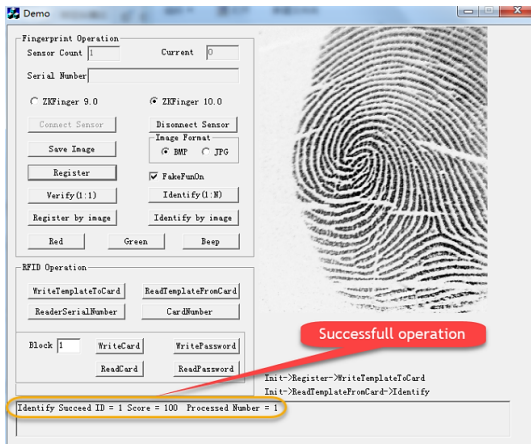
6. After the Sensor is connected, the Sensor Count is automatically displayed as 1. (It's equivalent to a user ID.
and we can set it on User ID, when we need to register many User.



7. The default ID of the system is 1. Click **Register** and press the finger three times on the Fingerprint Scanner to Register and click **Save Image**.



8. After successful Registration, click **Identify (1:N)** and press the registered finger on the Fingerprint Scanner for verification.

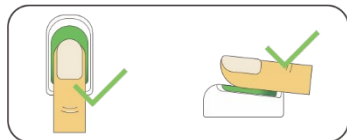


7. Operating Instructions

Guide to Place the Finger

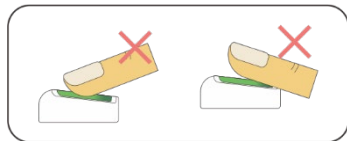
It is recommended to use the index finger, middle finger or the little finger for registration.

- **Proper Positioning of Finger**



Note: The finger needs to be pressed flatly and placed accurately over the Sensor area.

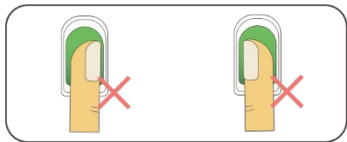
- **Improper Positioning of Finger**



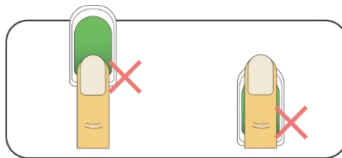
Vertical (not flat)



Too close to the edge



Crooked




Too low or high

Cautions

1. Make sure the fingers are clean when using the Fingerprint Scanner.
2. Place the finger correctly.
3. Recommended to use the index, middle or little fingers for Registration.
4. Please avoid using the thumb and pinky fingers, because these two are clumsy when pressing on the Semsor Area.

Suggestions

1. Please keep the sensor away from dust.
2. Please use adhesive tape to clean the Sensor area.
-  Do not use water or other detergents, which may damage the sensor.
3. Please use a wool-free cloth to wipe the Sensor area.
4. Please make sure the Sensor area is clean after each use.

Possible Complications

Some issues may cause difficulties to recognize the Registered fingers or during new Registration. They are:

1. Smoothed out fingers;
2. Too many wrinkles on fingers;
3. Layer of any material on fingers;
4. Extremely dry and wet fingers.

Solutions

1. If the user experiences any difficulty during Registration, they can either delete the fingerprint and re-register or can try using any other fingers.
2. It is recommended to choose the suitable finger with fewer wrinkles, no peeling, and clean finger for Registration.
3. Always try to maximize the Contact Area of the finger.
4. Armatura suggests registering alternative Fingerprints.
5. Soaked alcohol cotton is used for cleansing if the fingers are dry, and a clean napkin is used for cleansing if the fingers are wet.

Statements Concerning Human Rights Privacy

Dear Customers,

First of all, thank you for using the hybrid biometrics products designed and manufactured by ZKTeco. As a world-renowned biometrics core technology provider, we keep on researching and developing hybrid biometrics products. We also pay great attention to the compliance of relevant laws concerning human rights and privacy globally.

Statements as follows:

1. All of our civilian fingerprint recognition devices only focus on collecting fingerprint. ZKTeco does not save any personal data.
2. The characteristics of the fingerprint cannot be used to picture as an original fingerprint image.
3. ZKTeco, as the equipment provider, shall not take the legal responsibility for any inappropriate use.
4. If you have any disputes about the use of equipment regarding human rights or privacy, please negotiate internally.

ZKTeco's other fingerprint devices or development tools have the ability to collect the original image of a citizen's fingerprint. If users consider it as an infringement act, please contact the Government or the end provider of the equipment. As the original manufacturer of the equipment, ZKTeco will not be responsible for any legal liability. Users can refer to ZKTeco's official website to obtain relevant product information: <http://www.zkteco.com>.

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