

## **BIOMETRIC FINGERPRINT SENSOR MODULE FOR ARDUINO**

### **(1-3-BFPS/B3)**



These modules are typically used in safes, time attendance, biometric id system etc. There is a high powered DSP chip that does the image rendering, calculation, feature-finding and searching. It make adding fingerprint detection and verification super simple, just connect to any microcontroller or system with TTL serial, and send packets of data to take photos, detect prints, hash and search. You can also enrol new fingers directly - up to 162 finger prints can be stored in the onboard FLASH memory. There`s a green LED in the lens that lights up during a photo so user can know it is working or not.

Fingerprint processing includes two parts: fingerprint enrollment and fingerprint matching (the matching can be 1:1 or 1:N). When enrolling, user needs to enter the finger two times. The system will process the two time finger images, generate a template of the finger based on processing results and store the template. When matching, user enters the finger through optical sensor and system will generate a template of the finger and compare it with templates of the finger library. For 1:1 matching, system will compare the live finger with specific template designated in the Module; for 1:N matching, or searching, system will search the whole finger library for the matching finger. In both circumstances, system will return the matching result, success or failure.

#### **Applications Area:**

- Voter registration and identification.
- Border control via passport verification by using biological parameters.
- Population census by using biometrics.
- Driver`s license and professional ID card verification with biometric identifiers.
- Banking security-ATM security, card transaction
- Information system security
- Time and attendance (educational institutions, industries, etc)
- Forensic and crime investigations

**Technical Specifications:**

- Supply voltage: 3.6 - 6.0VDC
- Operating current: 120mA max
- Peak current: 150mA max
- Fingerprint image time: <1.0 seconds
- Window area: 14mm x 18mm
- Signature file: 256 bytes
- Template file: 512 bytes
- Storage capacity: 162 templates
- Safety ratings (1-5 low to high safety)
- False Acceptance Rate: <0.001% (Security level 3)
- False Reject Rate: <1.0% (Security level 3)
- Interface: TTL Serial
- Baud rate: 9600, 19200, 28800, 38400, 57600 (default is 57600)
- Working temperature rating: -20C to +50C
- Working humidity: 40%-85% RH
- Full Dimensions(LxWxH): 56 x 20 x 21.5mm
- Exposed Dimensions (when placed in box): 21mm x 21mm x 21mm triangular
- Lighting: Long light/Flashing
- Search Time : <1.0 seconds(1:500 average)
- Weight: 20 grams

**Pin-outs:**



**Schematic Block Diagram :**

