Advanced Card Systems Ltd.
Card & Reader Technologies

AET63 BioTRUSTKey

Technical Specifications

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Table of Contents

1.0. Introduction

The AET63 BioTRUSTKey combines the highly successful silicon fingerprint sensor with a smart card reader to achieve ultra-secure authentication. It is a fully-integrated fingerprint-based biometric subsystem, combining fingerprint sensing and algorithm processing in a single, compact device. All biometric algorithm processing is carried out in a custom chip integrated at the back of the silicon fingerprint sensor.

Our biometric products leverage ACS technology and experience in implementing readers in smart card-based authentication programs. By partnering with a leading biometric sensor and algorithm supplier, we are providing a high level of security and convenience for applications in the government, corporate, financial and healthcare sectors.

With BioTRUSTKey, you have all the hardware and software you need to add biometric security to your custom applications. For PC applications, the BioTRUSTKey provides the highest level of security. This is because both the template extraction and matching algorithms run within the device itself – not in the PC.

The BioTRUSTKey significantly reduces development time and cost. Therefore new product design can be validated quickly and accurately. With the simple Application Programming Interface (API) provided, designers can easily add fingerprint authentication and smart card features into their products/applications. A system can be developed very quickly even without an in-depth knowledge of biometrics.

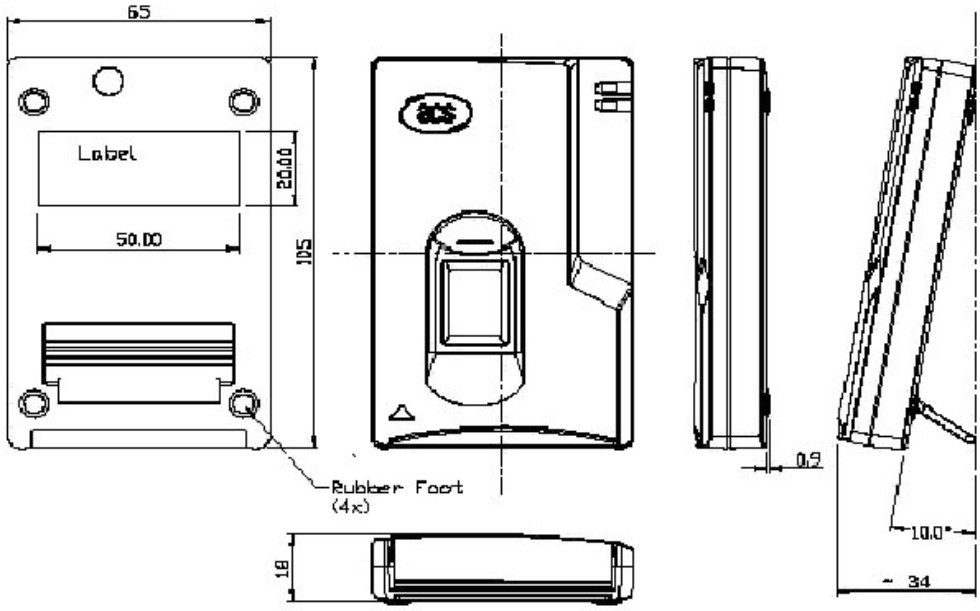
2.0. Features

- Integrated fingerprint scanner and smart card reader
- Low-speed USB interface
- Requires no additional power supply
- Smart card reader:
  - Supports all microcontroller cards, with T=0 or T=1 protocols
  - Supports ISO 7816 Class A, B and C (5V, 3V and 1.8V) cards
- Fingerprint scanner:
  - Match-on reader: Template extraction and matching algorithms run within the device itself, not in the PC
  - UPEK large area fingerprint sensor
  - Large active sensor size – 12.8 mm x 18.0 mm
  - High-resolution 508 DPI imaging
  - Utilizes CMOS active capacitive pixel-sensing technology, resulting to high-quality fingerprint images in any environment
- Encrypted fingerprint template stored inside smart card
- Session key generation among smart card, BioTRUSTKey processor and host computer
- USB data transmission protection via 3DES encryption
- Optional SAM slot

3.0. Typical Applications

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Public Key Infrastructure
- Network Security
- Access Control

4.0. Technical Specifications



Power Supply

Power supply ..... USB-powered
Supply voltage ..... Regulated 5 V DC

Universal Serial Bus Interface

Type ..... USB v1.1, four lines: +5V, GND, D+ and D-
Power source ..... From USB
Speed ..... 1.5 Mbps (Low Speed)

Smart Card Interface

Standard ..... ISO 7816-1/2/3, T=0 and T=1
Card type supported ..... ISO 7816 Class A, B and C (5V, 3V, 1.8V) cards
Supply current ..... max. 50 mA
Smart card read / write speed ..... 9600 – 96000 bps
Short circuit protection ..... +5V / GND on all pins
The presence of the smart card power supply voltage is indicated through a green LED on the reader
CLK frequency ..... 4 MHz
Card connector ..... Landing contacts (8 contacts)
Card insertion cycles ..... min. 100,000

Fingerprint Scanner Interface

Power consumption ..... Active mode: 20mA @ 5V + 105mA @ 3.3V
Sleep mode: < 1mA @ 5V + 70µA @ 3.3V
Active sensor size ..... 12.8 x 18 mm
Array size ..... 256 x 360 pixels
Image resolution ..... 508 DPI
ESD tolerance ..... +/- 15kV air discharge

Case

Color ..... Silver-gray

Operating Conditions

Temperature ..... 0 - 50° C
Humidity ..... 5% - 93%

Certifications/Compliance

PC/SC, CE, FCC, RoHS Compliant
Microsoft ® WHQL 2000, XP, Vista, 7

Device Driver Operating System Support

Windows ® 98, ME, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7
Linux