

## Specifications

Topic	Specification
FAR	0.0001%
FRR	0.01%
Maximum register finger	3~8000 fingers per personal identification terminal (maximum 5 fingers per person)
Attesting time	Less than 2 seconds
Sensor	Infrared LED Infrared highly sensitive CCD camera
Environment - Temperature / Humidity	0~40°C / 20%~80%RH
- Installation site	Inside buildings
- Waterproof	Water should not be spilled over the devices
Interface	RS-485 (between Finger Vein Attestor unit and Electric Lock Controller unit) Wiegand 26 bits (in case of connecting Finger Vein Attestor with existing security system)
Controller unit / Supply voltage	AC220 / 240V, 50/60Hz±1%

\* Hitachi reserves the right to change the specifications without prior notice.

**HITACHI**  
Inspire the Next

Biometric  
Security Solutions

### Hitachi Asia Ltd.

16 Collyer Quay, #20-00 Hitachi Tower,  
Singapore 049318  
Tel: 65-6538-5490 Fax: 65-6538-9011  
Email: webmaster@has.hitachi.com.sg

### Hitachi Asia (Malaysia) Sdn. Bhd.

Suite 17.3, Level 17,  
Menara IBC (Letter Box No.5),  
No. 8 Jalan Sultan Ismail,  
50250 Kuala Lumpur, Malaysia  
Tel: 603-203-18751 Fax: 603-203-18758

### Hitachi Asia (Thailand) Co., Ltd.

18th Floor, Ramaland Bldg.,  
952 Rama IV Road,  
Bangrak, Bangkok 10500, Thailand  
Tel: 66-02-632-9292 Fax: 66-02-632-9298/99

### Hitachi Asia Ltd. - Philippines Branch

25th Floor, Pacific Star Buliding  
Corner Makati & Sen. Gil Puyat Avenues  
Makati City, Metro Manila, Philippines  
Tel: 63-2-811-5005/06, 63-2-819-7528/29  
Fax: 63-2-819-7539

### Hitachi Asia Ltd. - Jakarta Office

MidPlaza 1, 10th Floor,  
Jl. Jend. Sudirman Kav. 10-11  
Jakarta 10220, Indonesia  
Tel: 62-21-574-4313 Fax: 62-21-574-4312

### Hitachi Asia Ltd. - Ho Chi Minh City Office

7th Floor, The Landmark  
5B Ton Duc Thang Street  
District 1, Ho Chi Minh City  
Tel: 84-8-829-9725 Fax: 84-8-829-9729

### Hitachi India Pvt. Ltd.

#### Hitachi India Trading Pvt. Ltd.

#### - New Delhi

10th Floor, Hindustan Times House  
18-20, Kasturba Gandhi Marg,  
New Delhi 110001  
Tel: 91-11-2331-5635/2371-2817  
Fax: 91-11-2331-3742

#### - Mumbai Branch

314, D-Wing, Floral Deck Plaza  
Central Road, MIDC, Opp. SEEPZ  
Andheri (East), Mumbai 400093  
Tel: 91-22-2832-1326/28 Fax: 91-22-2825-2559

#### - Bangalore Branch

#101, 1st Floor, Shah Sultan Complex  
No. 17, Cunningham Road  
Bangalore 560052  
Tel: 91-80-238-6986/87 Fax: 91-80-2386988

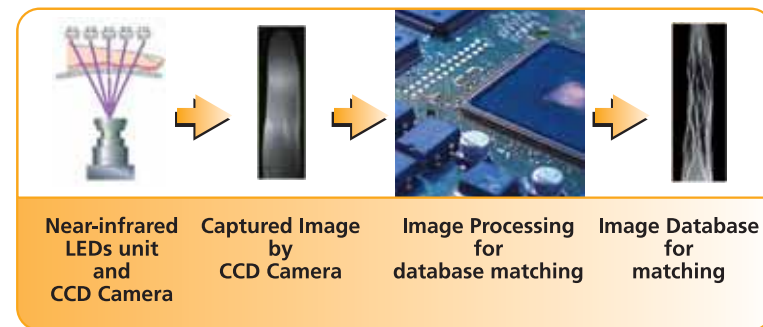
Hitachi Biometric Security Solutions

# Hitachi Biometric Security Solutions Finger Vein Verification / Identification

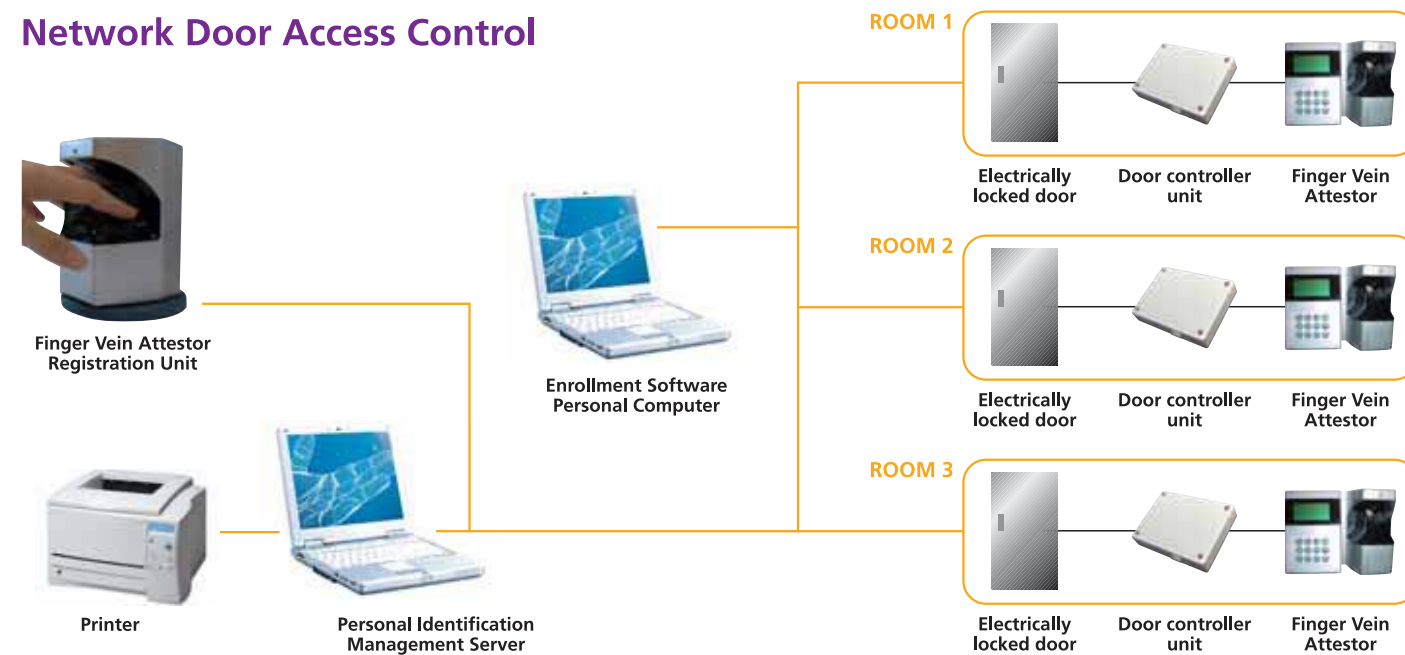
# Biometric Security Solutions

## Principle

The basic principle on which the finger vein authentication system is based is shown on the right. Near-infrared rays generated from a bank of LEDs (light emitting diodes) permeate the finger and are absorbed by the haemoglobin in the blood. The areas in which the rays are absorbed (i.e. veins) thus appear as dark areas in an image taken by a CCD camera located on the opposite side of the finger. Image processing can then construct a finger-vein pattern from the camera image. This pattern is then compressed and digitized so that it can be registered as a template of a person's biometric authentication data.



## Network Door Access Control



## Management Systems

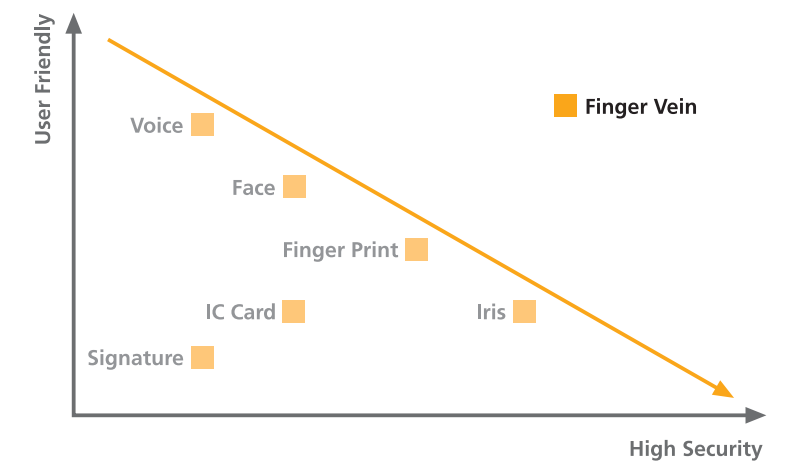
- MS-Access Database Host System
- Ethernet Network Enabled
- USB for Centralized Enrollment
- 16 Time Zones to Administer User Access
- Transaction Record Monitoring
- Data Export for Time Attendance and Payroll
- Support MS Window XP/2000

## Advantages

The finger vein certification provides customers with a reliable and user-friendly security system.

- The advantages of finger vein technology are:
- High Acceptability (suitability of all skin types, including dry skin)
  - Easy and Hygienic Attesting (minimum physical contact)
  - Live Body Data Only
  - Security of Data (non-traceable and non-vestigial)
  - Tamper-Proof and Reliable
  - Precision of Certification
  - Eliminate Transferability
  - Integration with Other Smart Card Systems

## Comparisons of Biometrics



## Gates and Access Egress

