



*Pioneering Digital World with a One-Card™ System*

한 장의 카드가 여는 디지털 세상

# I AM™ CARD INTRODUCTION

---

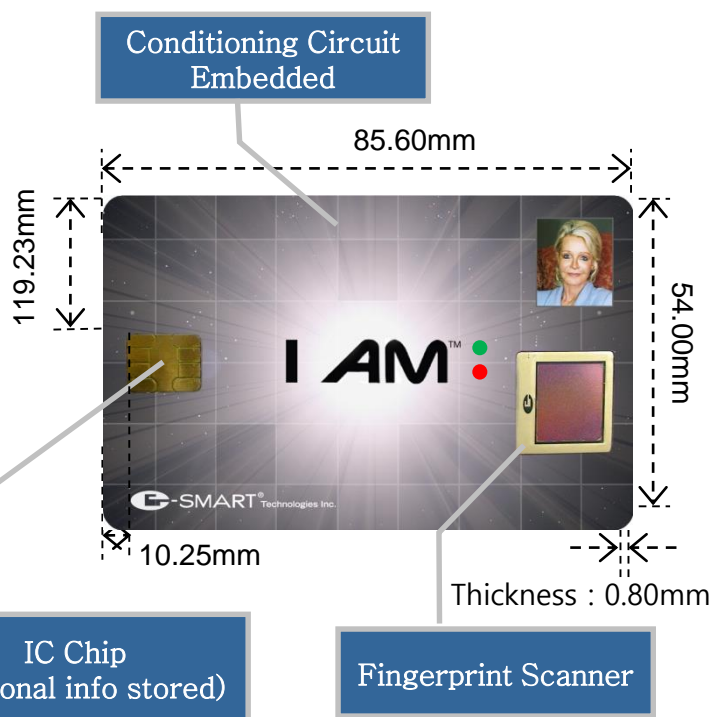
March, 2009

e-Smart  Korea

# 1. I AM™ Card Introduction

## II. Product Introduction

- I AM™ Card is the world's first ISO standard compatible smart card with a complete on-card biometric fingerprint sensor and multi-function applications (USP 7,278,025)
- I AM™ Card is activated for use only after the user is identified by on-card fingerprint sensor (replacing or supplementing Pin No.)

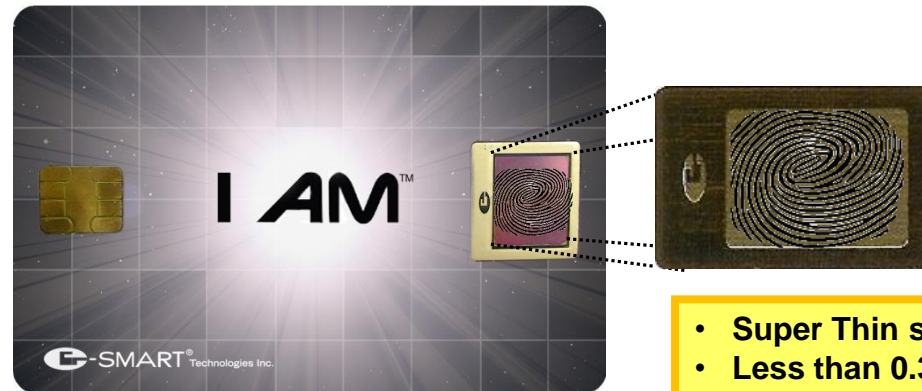


| Item                  | I AM™ CARD  |
|-----------------------|---|
| <b>Classification</b> | Contact and Contactless Type (Optional)   |
| <b>Standard</b>       | ISO7816 (Standard IC Card Contact Communication Specification)<br>ISO/IEC 14443 A or B (Standard RF Card Contactless Communication Specification)   |
| <b>Input Voltage</b>  | 3.0 ~5.5 V  |
| <b>Reader Unit</b>    | Contact : Compatible with existing ISO standard system<br>Contactless : Original Wireless Power Reader (Optional Configuration Required)  |
| <b>Feature</b>        | <ol style="list-style-type: none"> <li>1) Identity Verification and Privacy Protection</li> <li>2) Valid distance Contactless Communication (Optional) (Distance : 0.5 inch)</li> <li>3) Network Compatibility (TCP/IP integrated Network Authentication)</li> <li>4) ISO Standard Dimension</li> <li>5) LED Indicator (Optional) Red/Green (Blue) LED</li> <li>6) Wireless Power (Optional) Patent protected Solivan Air Power Transfer.</li> <li>7) PKI Storage Function (additional issuance necessary) Compatible with specification of General banks and financial settlement</li> </ol> |

\* All or part of descriptions are subject to change under e-Smart's discretion at any time without notice.

## 2. I AM™ Card Fingerprint Sensor

## II. Product Introduction



- **Super Thin size 23x15x0.33mm**
- **Less than 0.33mm thickness**
- **Possible to minimize ¼ when embedding onto cell phones**

- **Patented ISO compatible Fingerprint Matching on card system (USP 7,278,025)**
- **Fast and robust fingerprint matching system on card by the combination of patented fingerprint sensor (USP 5,079,949, JP 1805713 etc), patent pending matching algorithm and fast access flash ROM embedded RISC CPU.**
- **Patent pending faked fingerprint detection function. (Optional)**
- **Collaborations with BMF, Denver Airport and Japanese District Police Department for more than three years.**

\* All or part of descriptions are subject to change under e-Smart's discretion at any time without notice.

Super Thin Gold type Biometric Fingerprint Sensor

|                                 |   |
|---------------------------------|---|
| <b>FRR</b>                      | 0.01%   |
| <b>FAR</b>                      | 0.001%  |
| <b>Authentication Rate</b>      | 0.5-1.5 sec   |
| <b>Algorithm Method</b>         | Feature points, hybrid, and complex number plane                          |
| <b>Finger Template</b>          | Maximum 5 (Optional)  |
| <b>Sensor</b>                   | 500 dpi, 260 dpi  |
| <b>Electrostatic Protection</b> | 16kv  |
| <b>Recognition Method</b>       | 1) Right power capacity Method (current)<br>2) Pressure Method (expected) |
| <b>Grayscale</b>                | 8 bit / cell  |

### 3. Card Comparison

## II. Product Introduction



#### Comparison of I AM™ Card with Existing Access Control Card

| Category                | I AM™ Card                                 | General Access Control Smartcard |
|-------------------------|--|----------------------------------|
| User Authentication     | Use only user's fingerprint (only one PIN) | Anyone can be authenticated      |
| Theft or loss           | Cannot be used by others                   | Anyone can be authenticated      |
| Duplication Possibility | Never                                      | Possible                         |



#### Comparison with Other Fingerprint Sensor

|     |      |      |           |
|-----|------|------|-----------|
| X   | △    | ○    | ◎         |
| BAD | FAIR | GOOD | EXCELLENT |

| Conditions                  | Optics | Electricity | Conductivity | e-Smart Card |
|-----------------------------|--------|-------------|--------------|--------------|
| Dry skin                    | X      | △           | △            | ◎            |
| Wet skin/moist              | X      | △           | ○            | ◎            |
| Wet sensor                  | X      | X           | ○            | ◎            |
| Light stimulus              | X      | ◎           | ◎            | ◎            |
| Finger position             | ◎      | △           | △            | △            |
| Foreign substance on finger | X      | △           | △            | ◎            |
| Sensing scope               | ○      | X           | X            | ◎            |
| ESD protection              | ◎      | X           | X            | ◎            |
| Price                       | X      | ○           | ○            | ◎            |

### NID CARD



Residence card, public officials card,  
driver's license, passport, health insurance card

### BANK CARD



Prepaid card, debit card, credit card,  
electronic bankbook

### ACCESS CARD



Bus, subway, taxi, parking lot, tollgate, access control to building,  
computer and network access control

**Thank** you



e-Smart  Korea