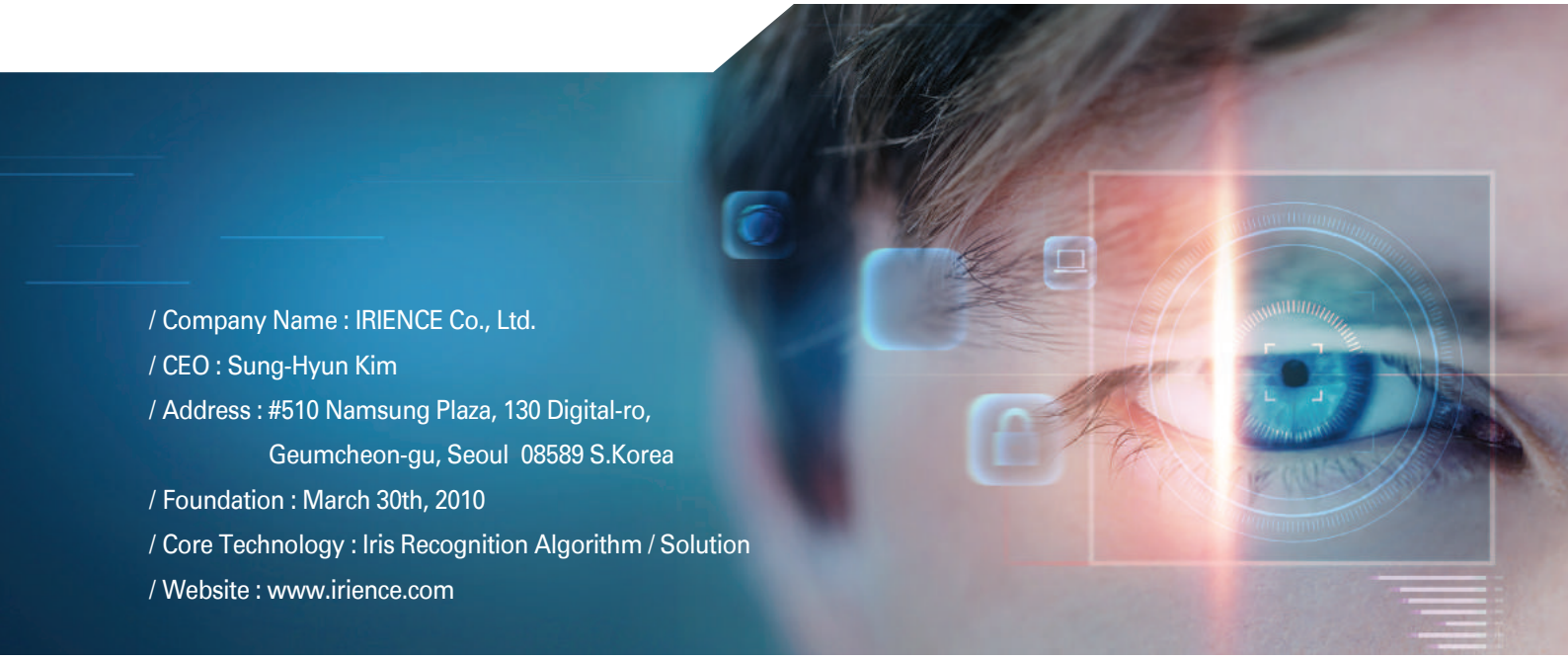
IRIENCE

Iris protects your Security

IRIENCE
high security solution group

About Us



/ Company Name : IRIENCE Co., Ltd.
/ CEO : Sung-Hyun Kim
/ Address : #510 Namsung Plaza, 130 Digital-ro,
Geumcheon-gu, Seoul 08589 S.Korea
/ Foundation : March 30th, 2010
/ Core Technology : Iris Recognition Algorithm / Solution
/ Website : www.irience.com

Iris recognition is one of the most advanced biometric technologies that is used for the identification of a person. IRIENCE Co., Ltd. founded in 2010 is located in Seoul, Korea and is the advanced security iris recognition R & D based company specialized in the cutting-edge iris algorithm.
Our five world-based patents algorithm enables to apply to various fields such as Access Control, System Integration to Module (Camera Module & Smart Phone application) and current hot trend, FinTech like the mobile payment & banking, credit card payment, on-line shopping payment etc.

Business Models

License

- Iris Recognition License for Access Controller
- Iris Recognition License for Smartphone & Mobile Device
- Iris Recognition License for Network based System
- Iris Recognition License for PC

Product

- ONE-EYE type Iris Recognition Access Controller
- TWO-EYE type Iris Recognition Access Controller
- Compact & Portable Iris Recognition Device

FinTech / SI

- Electronic Payment (Mobile, Bank, Credit card, etc.)
- SI for Mobile
- SI for Camera

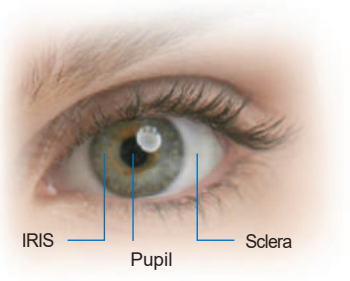
Module

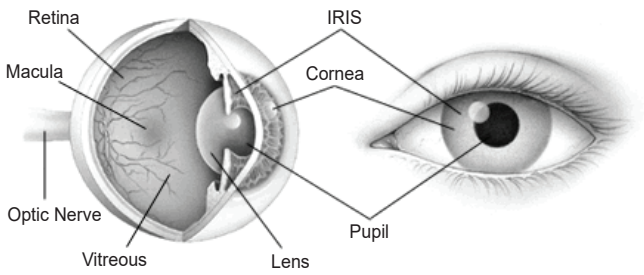
- Sensor & Iris Recognition board
- Modules for Iris Recognition Access Controller / Door Lock / Safe / ATM

IRIS

What is IRIS ?

Iris is the part of the eye located in between the pupil and the sclera that has the same function as the aperture of the camera. It is responsible for controlling the diameter and size of the pupils and the light that reaches the retina.
The iris consists of the most complex and elaborate fibrous tissue in our body.





No two iris patterns are alike. The iris of twins are different, moreover even the iris of the left and right eye of the same person are found to be different. For iris authentication, different patterns are extracted with the iris algorithm, stored and used for identification.

Characteristics of Iris

/ Constant : The formation of the comb-like shape of the iris is formed during infancy and does not change throughout life. (With the protection of the eyelid and cornea, the iris has a very low risk of getting damaged)

/ Distinct : The distinct pattern of the iris is formed with no connection with the genetic information of the individual. Thus, even identical twins have different patterns along with both eyes of the same individual.

/ Unique : The iris of each individual is much more diverse than fingerprints or retina. Thus the probability of two individuals having the same iris pattern is $1/10^{78}$ making such chance closest to zero.

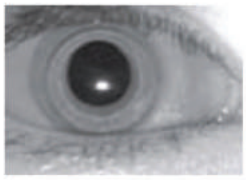
/ Stability : As a non-contact method, the iris recognition method, as compared to other methods (keypad, fingerprint, or other methods with contact), is more stable.

Superiority of Iris Recognition Technology

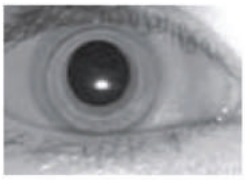
Biometrics	Iris	Fingerprint	Vein	Face detection	Palm/hand shape
EER	0.000000001	0.001~0.0001	0.00001	3.0	0.0001~0.00001
Speed	0.5~1 sec.	1 sec.	2 sec.	1 sec.	2 sec.
Fake/Replicate	Almost impossible	Possible	Almost impossible	Possible	Possible
Data	Iris pattern	Fingerprint points	Vein pattern	Shape of face	Palm/hand shape
Reliability	High	Low	Low	Low	Low
Technology	High	Low	Low	Low	Low
Cost	Low	Low	Low	Low	High
Remark	Advanced biometric technology High security	Easily transformed easy forgery and falsification	Instability according to position	Low accuracy and be affected by light and posture	Self distorted, Instability due to temperature and humidity change

CORE TECHNOLOGY

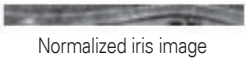
IRIENCE's Iris Recognition Algorithm [ISO 19794-6 Compliant]



Original image, with hard contact lens



Correct segmentation, even with hard contact lens



Normalized iris image

Binary template for matching

- Fast frame rate extracting iris feature from camera
- Fast, powerful 1:N matching
- 10,000,000 template matching per second
- ISO compliant image quality analytics
- Multi-thread for server-based ID management systems

Advantages of IRIENCE's Core Technology

/ Accurate Iris Recognition

Registration and Authentication of iris information regardless of iris color
Solving the recognition problem due to the difference of eye shape of Oriental and Western people

/ Obtained International Patents

Developed and registered for international patents (US, China, UK, Germany, Japan)
Secured the original technology of hardware and software

/ Forgery Proof

Blocks all authentications using photos, videos, artificial / non-living irises

/ Safety of Biometric Information

Stores data extracted from the iris images and not the video data

/ Flexible Operating System

Iris recognition under natural lighting, with the exception of direct lighting
Operates normally in a wide temperature range -20 ~ 60℃

/ Subminiature H/W

Developed the world's smallest subminiature iris recognition module
(Wide application into PC or mobile of access control / time attendance device)

Patents

[USA]

[U.K]

[GERMANY]

[CHINA]

[JAPAN]

[KOREA]

EYEMASTER _TWO-EYE Embedded Access Controller

EYEMASTER is an iris recognition access controller which enrolls and authenticates two eyes simultaneously to the exact. Embedded type and Separate type is optionally available. As non-contact type, iris recognition technology brings the higher security and convenience than contact-type biometrics. Further, it is suitable for various solutions and applications. EYEMASTER reflects users various preference with RFID cards interlocking service and users can easily use it through the LCD instructions

Features

- Embedded Stand-Alone type & Server authentication type available
- RFID cards and PASSWORD options
- Excellent Authentication Rate even though wearing glasses & goggles
- Including distance guidance function on LCD frame
- Iris & Face Image Capture
- ISO 19794-6 Iris Image Data Standard
- Easy Enrollment/Authentication
- Contactless & Convenient Authentication
- Can be used regardless of user's height with slide tilting method

Specifications

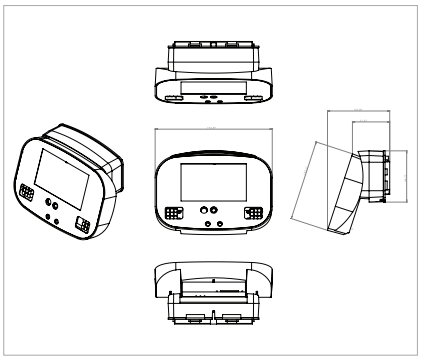
Item	EYEMASTER
CPU	A83T (ARM Cortex™-A7, Octa-Core,1.8GHz)
Memory	1024MB DDR3 / 16GB eMMC
Image Standard	Meets ISO 19794-6 ; exceeds 4.0 lp/mm @ > 60% contrast
Template Capacity	30,000 users
Recognition Distance	40 ~ 45 cm
Verification Time	Within 1 second
Temperature	-20 ~ 60℃
Interface	USB 2.0 High Speed. Touch LCD, TCP/IP
Power Support	Independent power supply require : 5,000 mA at 12.0V (supplied with system)
Size	194 x 134 x 106 mm

* Product appearance and specifications are subject to change without notice.

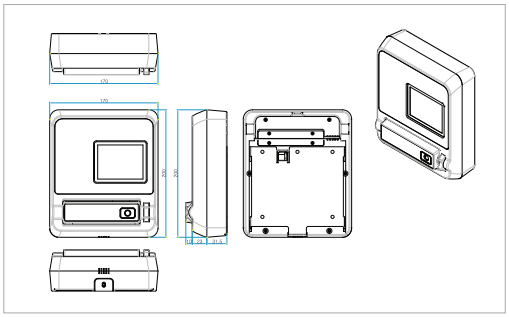
01 OPTION Applied to various fields such as Access control, Drinking water management, Attendance management, ERP interlocking, PC security, Safe, and Public sector

02 OPTION Can be used regardless of user's height (Slide tilting method)

03 OPTION Easy to use for everyone (LCD with a Distance Guidance Function)



ER-100 _ONE-EYE Embedded Access Controller



ER-100 is iris recognition access controller which enrolls and authenticates one eye simultaneously to the exact.
As embedded type, separated type is optionally available.
As non-contact type, iris recognition technology brings the higher security and convenience than contact-type biometrics.
Further, it is suitable for various solutions and applications.
It reflects users preference with RFID card and users can easily use it through the LCD instructions.

Features

- Monocular / integrated iris recognition access control system
- Domestic lowest price iris recognition access control terminal
- Various user taste reflected by RF card interlock
- Full image recording with face image recording
- Convenient UI through touch-type LCD display
- Provides tilting dial to eye level to reflect user convenience
- Stylish design, fast recognition speed

Specifications

Item	ER-100
Model Type	Embedded (Standalone)
Iris Capture Range	155 ~ 165 mm
Capture Time	<0.5s
Number of user	5,000 users
Recognition Mode	Iris, Card, Iris+Card (And, Or)
Eye Safety	ISO/IEC 19794-6(2005&2011) / IEC62471: 22006-07
Communication	TCP/IP
Operating Temperature	-20 ~ 50℃
Power Supply	12V/5A
Accessory	Embedded Door Controller (Relay)
Size	164 x 197 x 60 mm

* Product appearance and specifications are subject to change without notice.

IRIS SCOPE _IRIS Recognition Access Controller

[IRIS SCOPE]

[MCU 110]

IRIS SCOPE is the only ONE-EYE scope type camera in the world. It authenticates one eye and face image to the exact. IRIS SCOPE can be used in both indoor and outdoor environments. It is ideal product for harsh weather environments and designed to withstand a wider temperature range.

Features

- As independent device, it can be integrated with MCU 110
- Ideal product for poor authentication environments like construction sites
- Iris & Face Image Capture
- Convenient for children, senior to adjust recognition distance
- ISO 19794-6 Iris Image Data Standard
- Sleek & Aesthetic Design
- Protection against Dust and Water

Specifications

Item	IRIS SCOPE
Image Standard	Meets ISO 19794-6 ; exceeds 4.0 lp/mm @ > 60% contrast
Recognition Distance	14 ~ 16 cm
Temperature	0 ~ 60 ℃
Interface	USB 2.0 High Speed
Power Support	USB 2.0 (5V/500mA) / No additional power required
Certificates	KC, CE, FCC, RoHS, Eyesafety

Item	MCU 110
CPU	Intel D2550 1.86G Dual Core CPU
Interface	RS-232/485, USB2.0, Ethernet Relay signal (For only Door Lock)
RAM	DDR3 2GB
Storage	16GB
Size/Weight	77 x 204 x 70.5 mm / 311 g

* Product appearance and specifications are subject to change without notice.

IRISKEY III & IRIS SQUARE

_Compact & Portable IRIS Recognition Device

IRISKEY III

IRISKEY III is an ultra-small and portable iris recognition device for security and payment, which is used for iris recognition in the USB connection with PC, laptop, or smartphone.

Specifications

Item	IRISKEY III
Size / Weight	107×33×28mm / 51g
LED / Recognition Distance	Blue LED / 15cm (±1.5cm)
Power Support	USB 2.0 (5V/500mA) No additional power required
Temperature	0 ~ 50℃
Image Standard	Compliant with ISO 19794-6, Kind 7
Certificates	KC, CE, FCC, RoHS, Eyesafety

* Product appearance and specifications are subject to change without notice.

Features

- Simple use: Easy connection to electric devices for use
- Portability: Small and light weight
- Fast authentication: Authentication within 0.5 ~ 1.0 seconds
- Best security: By accessing electric devices through the recognition of a registered user's iris, free from various risks, such as password leakage, card key exposure, and hacking
- Application diversity: Financial payment, Folder locking, Service login, etc.
- Intuitive & functional design: Intuitive directions not requiring complex operation regardless of culture and languages

IRIS SQUARE

IRIS SQUARE is an ultra-small mobile iris recognition device that is used as an authentication tool for privacy and payment in smartphone.

Specifications

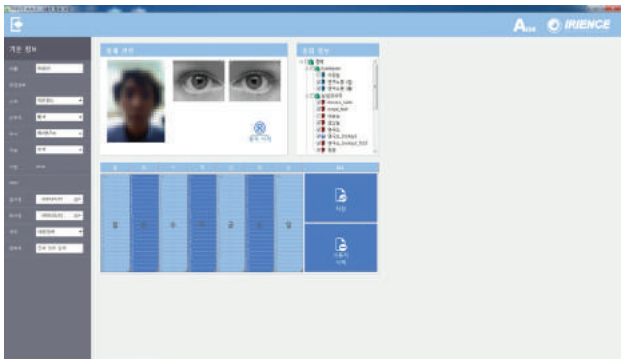
Item	IRIS SQUARE
Size / Weight	70×20×10mm
LED / Recognition Distance	Blue LED / 15cm (±1.5cm)
Power Support	0.5A@5VDC
Temperature	0 ~ 50℃
Power Support	Compliant with ISO 19794-6, Kind 7
Power	Operation : 1.2W, Standby : 330mW
Certificates	KC, CE, FCC, RoHS, Eyesafety

* Product appearance and specifications are subject to change without notice.

IRIENCE SYSTEM(SDK & API)

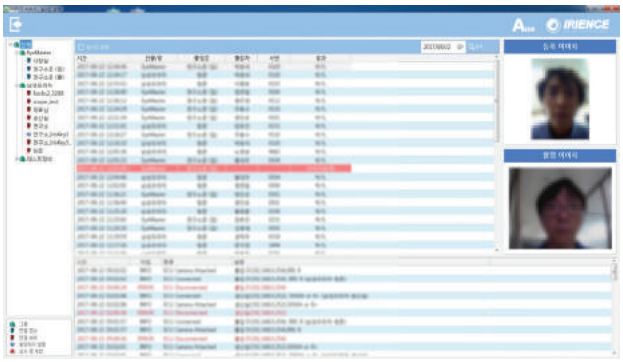
_IRIS Recognition Management Program(S/W)

This system can restrict unnecessary access to critical zones in offices, buildings, factories, and research institutes to protect human resources, assets, and information, and manages access records of users. By allowing or rejecting access through central controller, the system can thoroughly control access zones and prevent security risk.



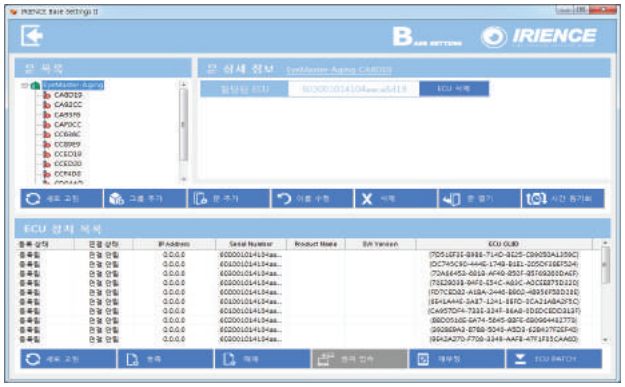
User Registration

- Register basic user information
- Register facial picture and iris information
- Select access door and access time



Real Time Monitoring Program

- Display the information found in real time
- Search for access information on a particular date
- Display the operating status of MCU



Access Door Management

- Manage information and control of groups and access doors
- Provide information on installed MCU devices

User / Time & Attendance Management

- Process the initial record as attendance, the final record as leaving by date (Calculate work hours)
- Send the work information of the user found to MS Excel
- Manage shirt work, daily work, weekly work schedules, and holidays by manager

Features

- Integrated UI with Access Control and Time & Attendance functions
- Integrated control of multiple devices by a single server
- Search by individuals, departments and period
- Operating cost saving
- Smartphone App support
- Program updating at the request of purchaser (optional)
- Available in SDK & API

Embedded Module _Iris Recognition Module

Iris Recognition Module is composed of Iris recognition camera and Processing board. It applies optimized algorithm, so it supports 1:1 authentication and 1:N identification of elevated recognition rate.
Also, it is designed to apply diverse products.

Features

- Convenience of application : Simply connect to electronic device with USB interface
- Subminiature Module : World's first subminiature Iris recognition Module with one-eye camera
- Fast authentication: Authentication within 0.5 ~ 1.0 seconds
- Best security: By accessing electric devices through the recognition of a registered user's iris, free from various risks, such as password leakage, card key exposure, and hacking
- Application diversity: Wide application into various solutions such as PC, mobile, access controller
- Customized Module : Provide customized design as it needs only minimum space

Module |

Specifications

Item	Module |
USB Driver	USB 2.0 (UVC compatible)
Size	30 X 18 X 22 mm
Driver Compatibility	Windows / Linux / Android
Recognition Distance	About 15cm
Video Data Transfer	USB data stream type

* Product appearance and specifications are subject to change without notice.

Module ||

Specifications

Item	Module ||
USB Driver	USB 2.0 (UVC compatible)
Size	30 X 18 X 8 mm
Driver Compatibility	Windows / Linux / Android
Recognition Distance	About 18~20cm
Video Data Transfer	USB data stream type

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Business Highlights

Accomplishment

- KEPCO (Korean Electric Power Corporation) Headquarters access control system installation
- Hyundai Motor R&D Center access control system installation
- National Cyber Security Center of Ministry of Strategy and Finance access control system installation
- KIHSA(Korea Institute for Health and Social Affairs) access control system installation
- Installed for Time & Attendance management at construction sites of POSCO, Dae-woo, Young-bin, Jung-in Constructions
- KOSPO (Korea Southern Power) access control system installation
- KT (Korea Telecom) Korea iris recognition access control system installation
- Ecuador Bank Iris Recognition System installation for Identification
- IBK bank ATM machine equipped with IRIENCE System for identification
- Creation Innovation Center & Start-up Campus of Korea access control system installation
- National Veterans' Hospitals(Five cities in Korea) authentication system installation

Certifications & Awards

- IRIENCE is the Korea's first reputable company obtained 'Iris Recognition Algorithm Performance' and 'Standard Conformance' Certificate from KISA* within iris recognition industry in 2008, 2010.
- Re-obtained 'Iris Recognition Algorithm Performance' Certificate from KISA in 2015 and Re-obtained 'Standard Conformance' Certificate from KISA in 2016
- Awarded two prizes at ITU** Telecom World 2015
  - Winner of ITU Telecom World Entrepreneurship Awards 2015
  - ITU Telecom World Recognition of Excellence

* KISA : Korea Internet & Security Agency

** ITU : The International Telecommunication Union is a specialized agency of the United Nations (UN)

〈 KISA Certificate 〉

〈 ITU Telecom World Entrepreneurship Awards 2015 〉

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