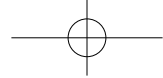


Security & Convenience
VIRDI



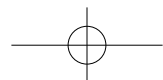
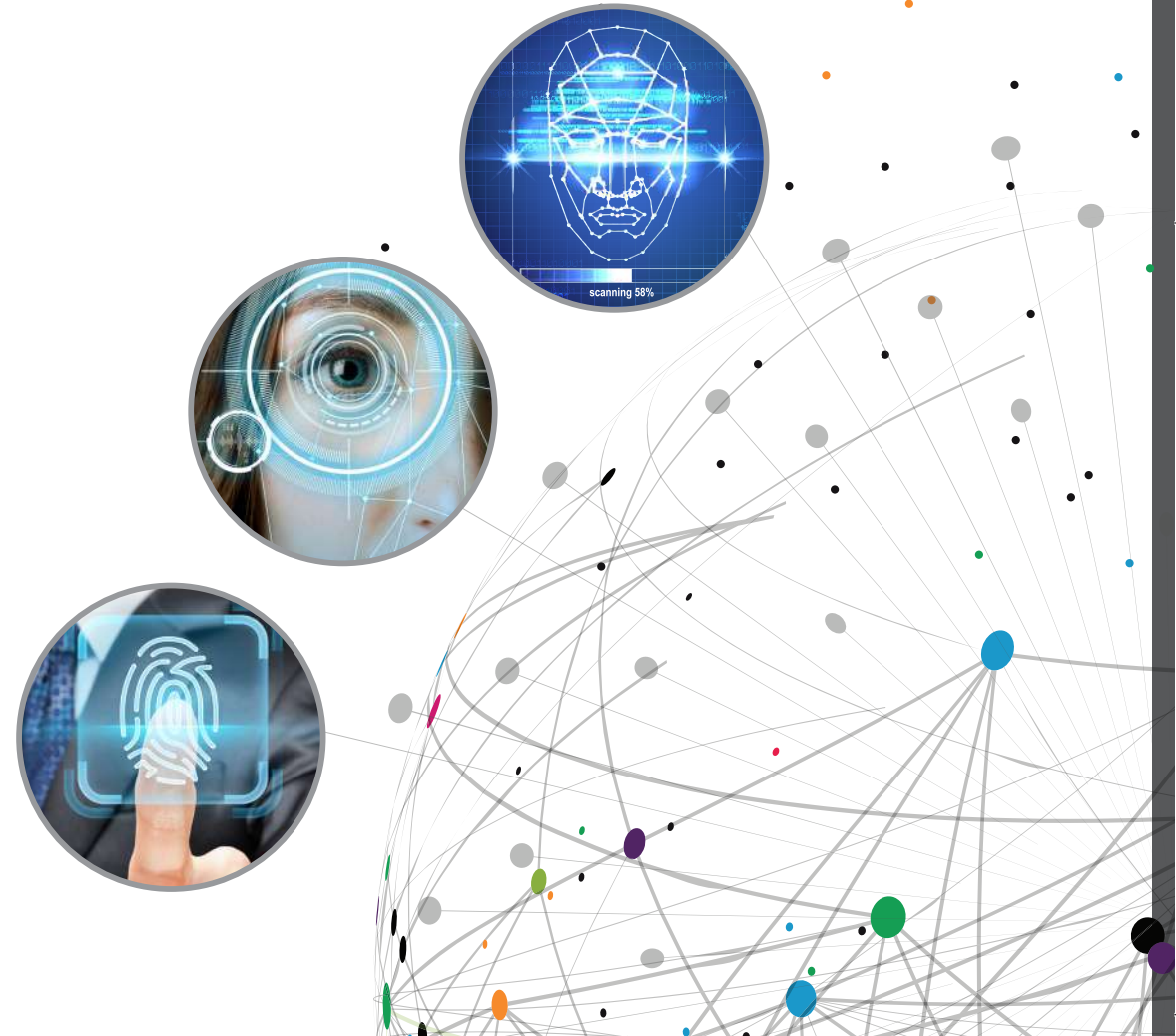
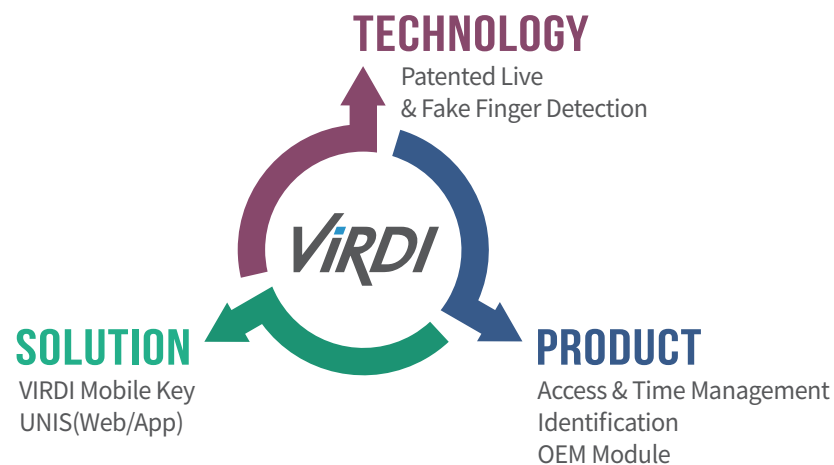


No.1 professional group in multiple biometrics field,
 Leading technical brand in fake fingerprint detection,
 A global brand active all around the world,

VIRDI

About VIRDI

VIRDI is a professional biometrics brand founded in 2000.
 VIRDI possesses core technologies such as fingerprint recognition algorithm,
 optical sensor manufacturing technology, fake fingerprint detection technology
 and active all around the world as a total business solution in the biometrics field.
 VIRDI is now in over 100 countries with 150 partners.
 You can see VIRDI products in markets all around the world.

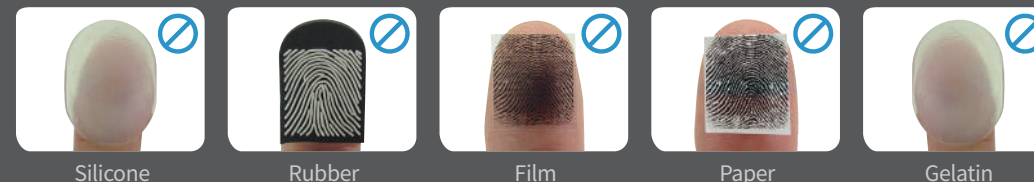




No.1 brand in fake fingerprint detection technology

Why is fake fingerprint detection technology important?

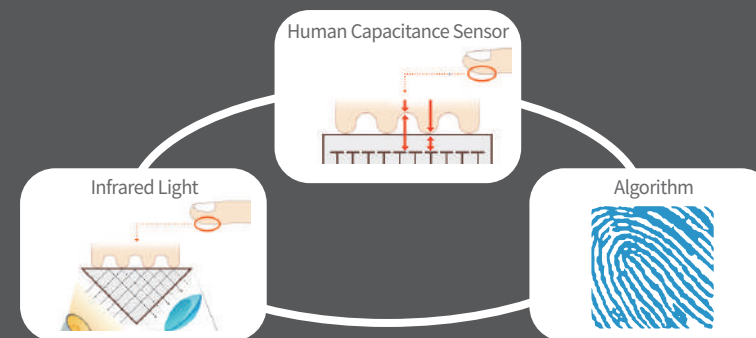
Fake fingerprints refers to fingerprints that is made of silicon and rubber or copied using paper or an OHP film. Most optic fingerprint recognition sensors are vulnerable to forged fingerprints and this could lead to security incidents such as personal information leakage.



VIRDI, having the largest number of patented fake fingerprint identification technology.

VIRDI's fake finger identification technology can prevent detection of forged fingerprints made of silicon, rubber, film, paper, and gelatin. This is possible through technologies such as Capacitance discrimination method, Optical characterization method, Algorithm discrimination method. We possess 15 patents in fake fingerprint detection and have become the No.1 brand in fake fingerprint detection.

(*Patent enrollment : 9, Application : 6 / Reference date : 2017.12)



VIRDI, FVC(Fingerprint Verification Competition) 1st place for 4years in a row.

VIRDI has been rated no.1 in the world in this fingerprint contest for 4 years in a row.

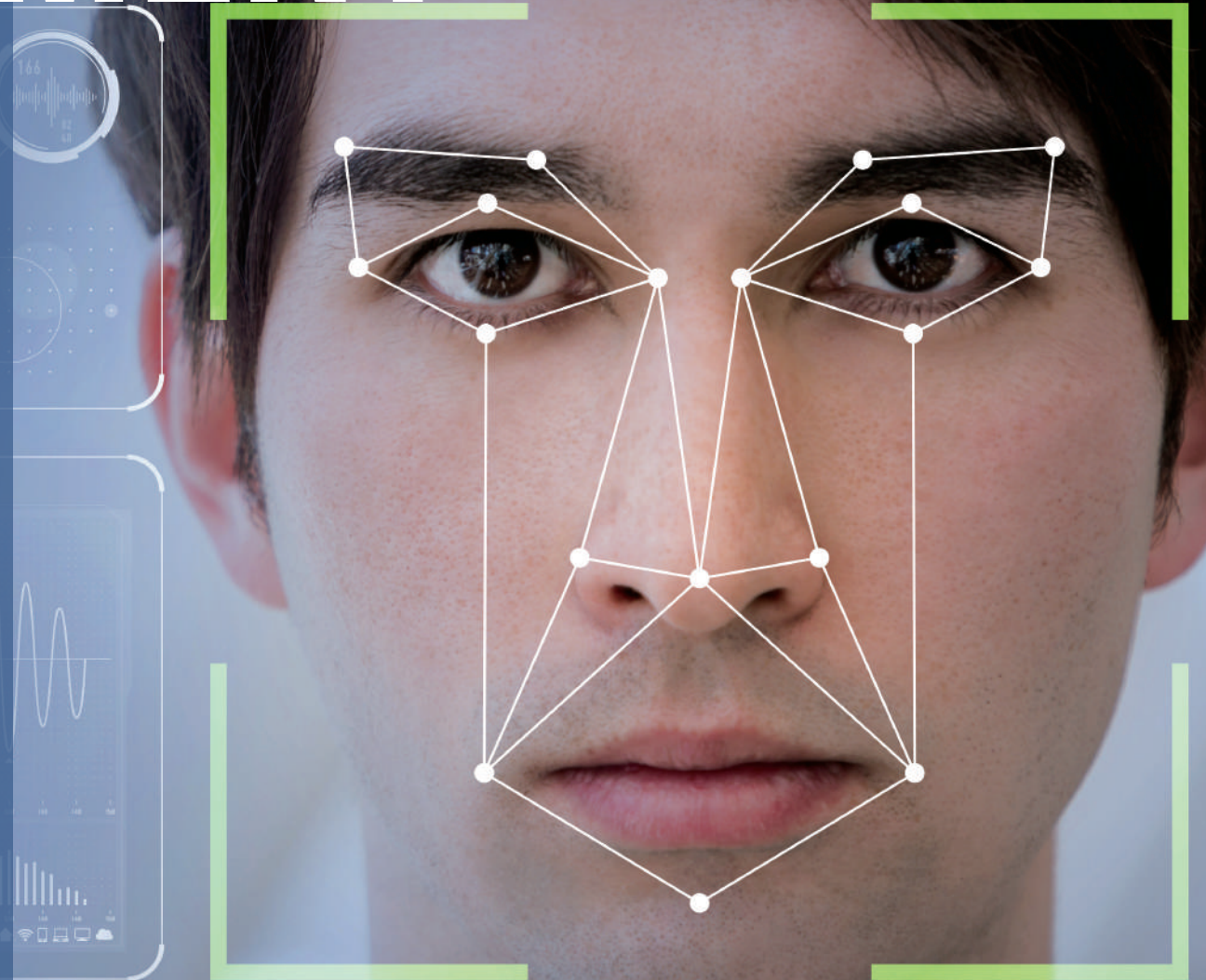
VIRDI's fingerprint recognition algorithm has fast fingerprint authentication and fast registration time and small match memory size(for fingerprint matching). It is the best fingerprint recognition algorithm in terms of product commercialization.

ACCESS & TIME MANAGEMENT

VIRDI's Access Control and Time / Attendance Systems, by integrating multiple biometrics technologies regarding fingerprint and face recognition, we provide solutions that maximize operational efficiency, including terminals and data management that enhance security and user convenience.

Especially, Fingerprint identification terminals, which are used most actively in the market for access control and attendance management, have increased the accuracy of identity authentication by incorporating counterfeit fingerprint identification technology.

This is why VIRDI products are used by leading global public and financial institutions and large corporations. VIRDI continuously strives to develop and research multi-biometrics technologies such as fingerprint, face, and iris to showcase leading products in the market and continue to be a NO.1 global professional brand.



BIOMETRIC TERMINALS



UBio-X Pro/UBio-X Pro Lite

World's No1 Performance Face / Fingerprint Terminal

- High Speed Matching Algorithm
 - Fingerprint 1:200,000 Templates <1sec
 - Face 1:150,000 Templates <1sec(UBio-X Pro)
 - 1:35,000 Templates <1sec(UBio-X Pro Lite)
- Up to 500,000 Users(1:1 Finger)
 - 200,000 Users(1:1 Face)(UBio-X Pro)
 - 100,000 Users(1:1 Face)(UBio-X Pro Lite)
- Up to 30,000 Lux
- Patented Fake Finger Detection



UBio-X Slim

Premium Fingerprint / Card Terminal

- High Speed Matching Algorithm
 - Fingerprint : 1:200,000 Templates < 1sec
- Up to 200,000 Users(1:1 Finger)
- Slim and Elegance Design
- The Slimmest 13.4mm Optical Sensor
- Patented Fake Finger Detection

BIOMETRIC TERMINALS



AC-7000

Biometric Face/ Fingerprint Terminal

- High Speed Matching Algorithm
- Face 1:10,000 Templates <1sec
- Fingerprint 1:50,000 Templates <1sec
- Up to 250,000 Users(1:1 Finger)
10,000 Users(1:1 Face)
- Auto-Tilt Function—auto adjusts depending on height
- 5" touch LCD
- Patented Fake Finger Detection



AC-5100



Fingerprint/Card/PIN and Mobile Key Terminal with Camera

- Up to 20,000 (1:1)/15,000(1:N) Users
- Up to 40,000 (1:1)/30,000(1:N) Templates
- Built-in Camera
- 2.8" Color LCD
- Patented Fake Finger Detection



AC-5000 Plus

IP Based Fingerprint/Card/PIN Outdoor Terminal

- Up to 20,000 (1:1)/15,000(1:N) Users
- Up to 40,000 (1:1)/30,000(1:N) Templates
- IP65 Dust & Water proof
- 2.8" Color LCD
- Patented Fake Finger Detection
- IK09 Optional



AC-2200



IP Based Fingerprint/Card and Mobile Key Outdoor Terminal with Camera

- Up to 10,000 (1:1)/5,000(1:N) Users
- Up to 20,000 (1:1)/10,000(1:N) Templates
- IP65 Dust & Water proof
- Built-in Camera
- 1.77" Color LCD
- Patented Fake Finger Detection



AC-2100 Plus

IP Based Fingerprint/Card Outdoor Terminal

- Up to 10,000 (1:1)/1,500(1:N) Users
- Up to 20,000 (1:1)/3,000(1:N) Templates
- IP65 Dust & Water proof
- Patented Fake Finger Detection



AC-2000



IP Based Fingerprint/Card and Mobile Key Outdoor Terminal

- Up to 10,000 (1:1)/1,500(1:N) Users
- Up to 20,000 (1:1)/30,000(1:N) Templates
- IP65 Dust & Water proof
- Patented Fake Finger Detection

CARD TERMINALS



AC 1100



Card and Mobile Key Terminal
with Camera

- 5" Color LCD With Touch
- VoIP supported
- Up to 200,000 Users

CONTROLLERS



MCP040

Card Four Door Integrated
Security Controller

- Supports up to 4 Doors
- 8 Monitoring Inputs
- Connect up to 8 readers/4 wiegand readers
- 50,000Users



VLC015B

Single Door Lock Controller with
backup battery option

- Single Door
- Use with VIRDI terminals with RS485

ACCESS READER



VSR20D

Outdoor Slave Reader

- Connect to MCP or other controllers
using RS485 or Wiegand

ACCESSORY



EB030

Touchless Exit Button

- Capacitance type exit button ,
no touch required

IDENTIFICATION

VIRDI's Identity Solution Products, consists of live scanners and USB scanners that scan fingerprint videos and seals from fingerprint sensors and convert them into digital images.

We have a variety of products such as fingerprint scanners and stamp scanners that can input one plane/rotation fingerprint, four fingerprint, long fingerprint, etc., and it is characterized by user convenience such as wide input window implementation and slim sensor development.

VIRDI's products are equipped with optical sensors and algorithms to identify fake fingerprints and have been certified in the global market-place by FBI certification.

UTILIZATION FIELD

Identification of public people

- Bank / Financial institutions
- Voter Registration / Electronic Voting
- Social / Medical services
- Commercial Facility Payment Service

Identification of criminal investigation

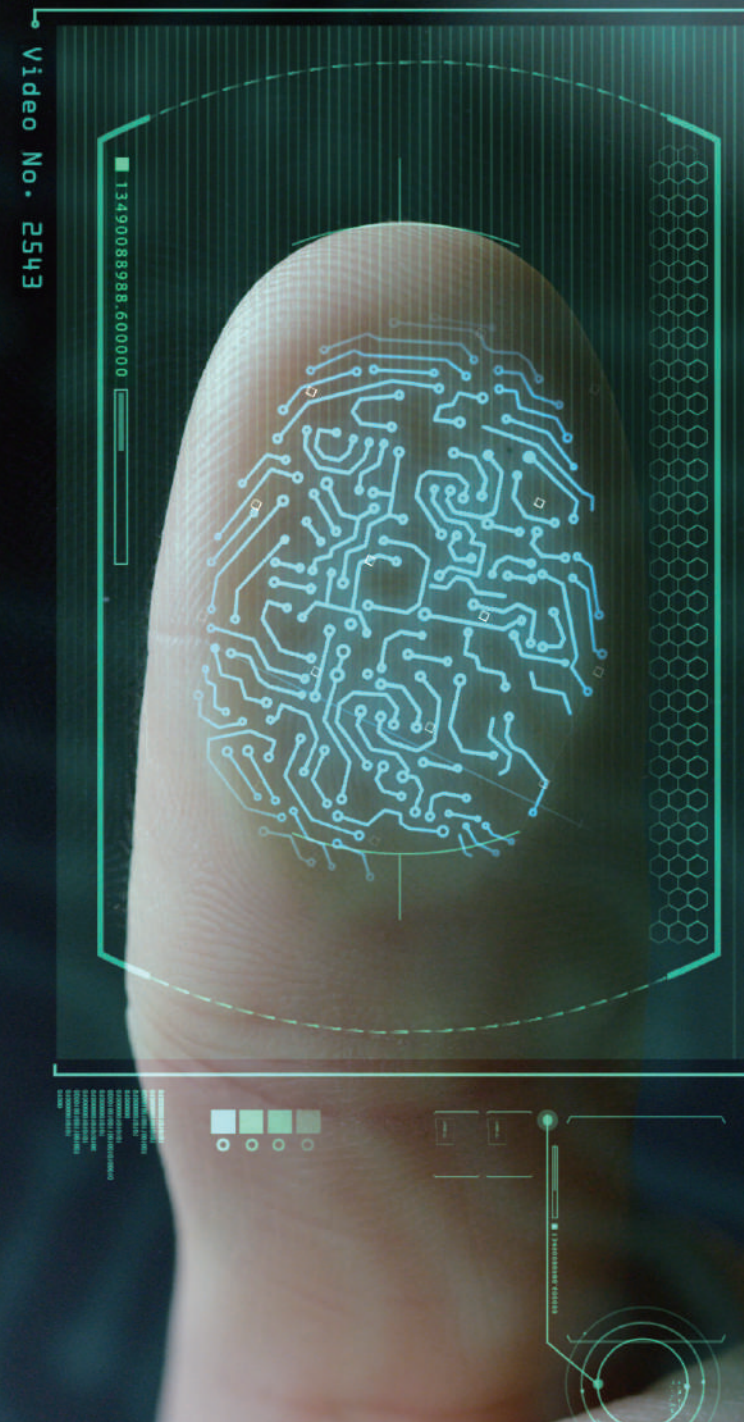
- National Police Agency / Justice Department / International Police

Immigration examination

- International Airport, Port Inspection Procedures
- E-Passport registration and confirmation
- Identify domestic / Foreign travelers

Financial business digital business

- Digitalization
- Financial business paperless system



ENROLLMENT SCANNERS



NScan-FA

IP 54 USB Single/Rolling Finger Enrollment Device

- Patented Fake Finger Detection
- Platen Size 26 x 27mm
- FBI PIV + FAP20
- SDK Support
- Windows, Linux, Android OS
- WHQL, EAC, CE, FCC, KC



VScan-S30MA

USB Stamp / Seal – or Fingerprint Reader

- 500 dpi Resolution
- Platen Size 31 x 31mm
- Sensing Area 30 x 30mm
- Interface USB 2.0
- Patented cleaned stamp scanner



FOH02

USB Card/Fingerprint PC Enrollment Device

- 500 dpi Resolution
- Platen Size 16 x 18mm
- Sensing Area 15 x 17mm
- Interface USB 2.0
- Support RFID, Mifare and Multi card
- Patented Fake Fingerprint Detection



FOH04

USB Fingerprint PC Enrollment Device

- 500 dpi Resolution
- Platen Size 21 x 21mm
- Sensing Area 20.3 x 20.3mm
- Interface USB 2.0
- FBI PIV Certification
- Patented Fake Fingerprint Detection

LIVE SCANNERS



NScan-T

IP 54 USB Four Finger Enrollment Device

- 500 dpi Resolution
- Platen Size 96 x 85.8mm
- Image Size 81.28 x 76.2mm
- Interface USB 2.0
- FBI IQS Appendix-F Certification
- Single Finger/Roll, Dual-Finger, Four-Finger, Two Thumbs Captures



NScan-P

USB Palm Reader Enrollment Device

- 500 dpi Resolution
- Platen Size 156 x 145mm
- Image Size 120x 130mm
- Interface USB 2.0
- FBI IQS Appendix-F, VCCI Certification
- Single Finger/Roll, Four-Finger, Palm, Writer's Palm Captures

OEM MODULES

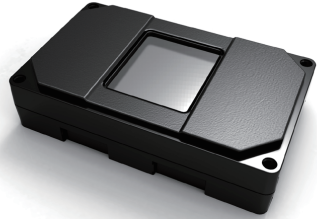


VIRDI's OEM Modules, use our fingerprint device in any product you want with our OEM Module. With leading technology to identify fake fingerprints using durable optical sensors, it is a product that has been verified by the leading global partners.

Evaluation Kit to support various application development, door control, safe, door lock, POS, etc., and other various fields.



OEM MODULES



NScan-SDL

All-in-one the Slimmest Optical Finger Scanner OEM Module

- 500 dpi Resolution
- Platen Size 16.4 x 19.4mm
- Up to 1,000 Templates
- The slimmest 13.4mm optical sensor
- Interface UART(TTL)
- Patented Fake Finger Detection



NScan-SM

Single/Flat USB Fingerprint Device

- 500 dpi Resolution
- Platen Size 16.4 x 19.4mm
- Sensing Area 13.8 x 14.8mm
- Interface USB 2.0
- IP65 (Sensor Surface)
- Patented Fake Finger Detection



NScan-FM

Single/Flat USB Fingerprint Device

- 500 dpi Resolution
- Platen Size 16.6 x 21.6mm
- Sensing Area 16 x 21mm
- Interface USB 2.0
- FBI PIV +FAP20 Certification
- IP65 (Sensor Surface)
- Patented Fake Finger Detection



FAS06D

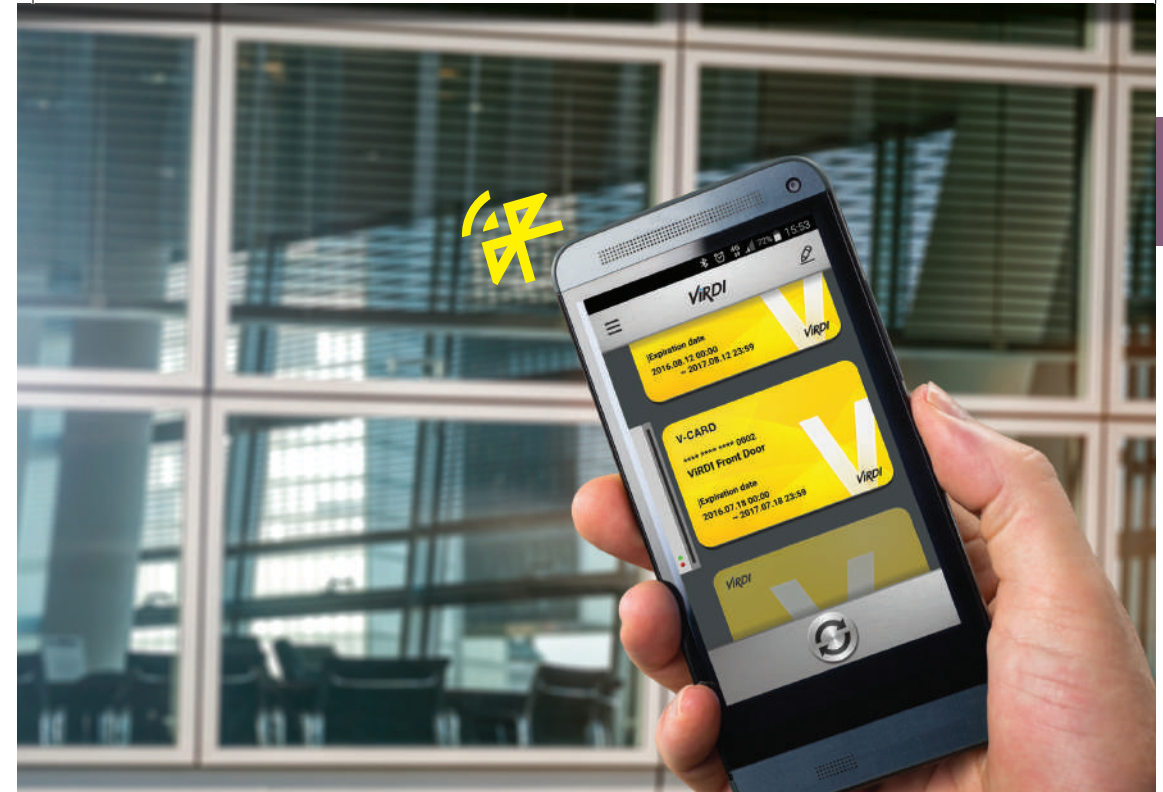
All-in-one Fingerprint OEM Module

- 500 dpi Resolution
- Up to 1,000 Templates
- Interface UART(TTL)
- Patented Fake Finger Detection

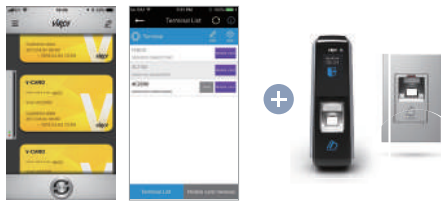
SOLUTION MOBILE KEY SYSTEM

Mobile Key System incorporates mobile access into the current conventional access control system.

Visitors can simply open the door with their smartphones while an admin monitors and controls the access at a distant office.



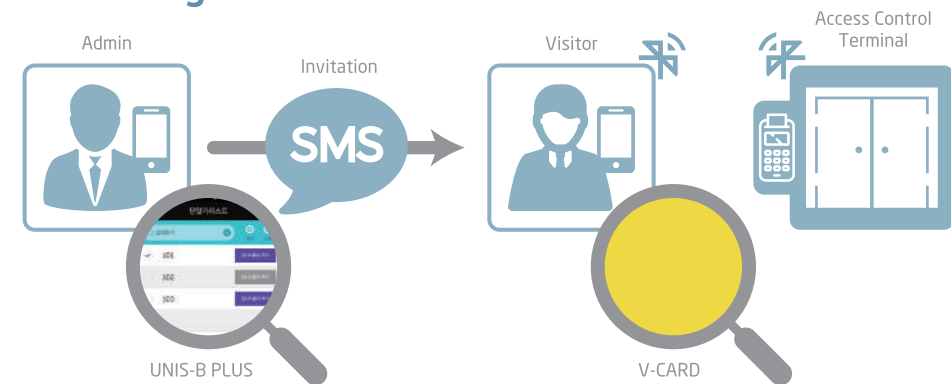
UNIS-B PLUS app (Administrator)



V-CARD app (User)



Mobile Key Solution



Features



Smartphone as Access Key



Remote Key Issuing through SMS



Real-time Access Event Monitoring



Various Types of Mobile Keys



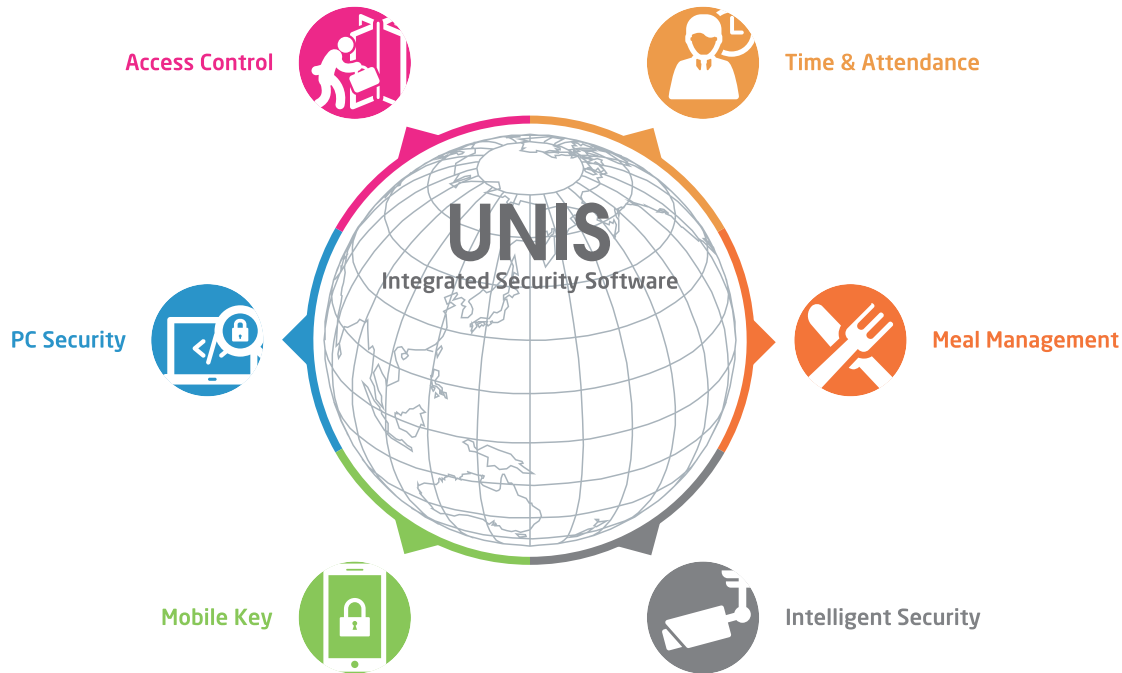
Compatible with Access Control Solution

Advantages

- Maximized user convenience by remotely issuing the access keys via SMS
- Maintenance cost is cut down by replacing access cards with intangible mobile keys
- Greater work efficiency by integrating with current access control systems

SOLUTION UNIS

Integrated Security Software



Features

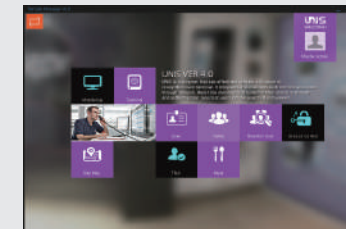
- | | | |
|---|---|---|
| GUI Powerful GUI for both Access control and Time & Attendance | Superior Fingerprint Algorithm | Multi-Terminal Management from Server |
| F/W Firmware Upgrade | ERP Interoperable with ERP and Groupware Systems | Easy DB Compatibility via ODBC MDB, MS-SQL, Oracle |
| Mobile App | MDB MDB Backup | Editable Program Text (Excel file) |

Web UNIS



Web-based version which requires no additional software installation. Easy accessibility granted.

UNIS



IP-based version which is widely appropriate from small to large businesses. Efficient access security management. DVR compatible

VTerminal



No hassle for user to install anything. Mobile devices work as portable terminals. Real-time GPS location data including a captured image sync with UNIS server installed at HQ or anywhere using 3G or Wi-Fi.



ACCESS & TIME MANAGEMENT

Model		UBio-X Slim	UBio-X Pro	UBio-X Pro Lite	AC-7000	AC-5100	AC-5000Plus	AC-2200	AC-2100Plus	AC-2000	AC-1100		
Product Image													
Authentication Method		Biometric	Biometric	Biometric	Biometric	Biometric	Biometric	Biometric	Biometric	Biometric	Card		
Dust/ Water Resistance		X	X	X	X	X	IP65	IP65	IP65	IP65	X		
Memory	Max Users	Card (1:1) / (1:N)	500,000	500,000	500,000	250,000	20,000	20,000	10,000	10,000	10,000	200,000	
		Fingerprint (Base on one finger enrollment per user)	1:1	100,000	500,000	500,000	250,000	20,000	20,000	10,000	10,000	10,000	X
		Face (Base on five Face enrollment per user)	1:1	100,000	100,000	100,000	25,000	15,000	15,000	5,000	1,500	1,500	X
		Face (Base on five Face enrollment per user)	1:N	X	200,000	100,000	10,000	X	X	X	X	X	X
		Iris (Base on 2 eyes (L/R) enrollment per user)	1:1	X	X	X	X	X	X	X	X	X	X
		Iris (Base on 2 eyes (L/R) enrollment per user)	1:N	X	X	X	X	X	X	X	X	X	X
	Templates	Fingerprint	1:1	200,000	1,000,000	1,000,000	500,000	40,000	40,000	20,000	20,000	20,000	X
			1:N	200,000	200,000	200,000	50,000	30,000	30,000	10,000	3,000	3,000	X
			MAX Templates per Finger	2	2	2	2	2	2	2	2	2	X
		Face	MAX Finger per User	10	10	10	10	10	10	10	10	10	X
			1:1	X	1,000,000	500,000	50,000	X	X	X	X	X	X
			1:N	X	150,000	35,000	10,000	X	X	X	X	X	X
		Iris	MAX Templates per User	X	10	10	10	X	X	X	X	X	X
			1:1	X	X	X	X	X	X	X	X	X	X
			1:N	X	X	X	X	X	X	X	X	X	X
	MAX Templates per Eyes	X	X	X	X	X	X	X	X	X	X		
	MAX Templates per User	X	X	X	X	X	X	X	X	X	X		
		X	X	X	X	X	X	X	X	X	X		
Logs		10,000,000	10,000,000	10,000,000	10,000,000	64,000	64,000	100,000	100,000	51,000	1,000,000		
images		50,000	20,000	20,000	20,000	17,000	X	10,000	X	X	15,000		
with server		TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP	TCP/IP		
other		USB	SD Card	SD Card	SD Card	Bluetooth	X	Bluetooth/USB	USB	Bluetooth	Bluetooth/USB		
Wireless LAN(Wi-Fi)		Optional	Optional	Optional	Optional	X	X	X	X	X	Optional		
Wiegand OUT		0	0	0	0	0	0	0	0	0	0		
RS232		0	0	0	0	0	0	X	X	X	0		
RS485		0	0	0	0	OSDP	OSDP	OSDP	OSDP	OSDP	OSDP		
Wiegand IN		0	0	0	0	0	0	0	0	0	0		
Display		LCD	5"Color Touch	5"Color Touch	5"Color Touch	5"Color Touch	2.8"Color	2.8"Color	1.77"Color	1.77"Color	X	4"Color Touch	
Backlight		0	0	0	0	0	0	0	0	0	X	0	
Embedded Camera		0	Dual	Dual	Dual	0	X	0	X	X	0	0	
125khz-EM		0	0	0	0	0	0	0	0	0	0	0	
HID Prox		0	0	0	0	X	0	X	X	0	X	X	
HID iclass		0	0	0	0	X	0	X	X	0	X	X	
13.56MHz Smart Card		0	0	0	0	0	0	0	0	0	0	0	
Keypad		Touch Screen	Touch Screen	Touch Screen	Touch Screen	0	0	X	X	X	Touch Screen		
Function keys		SOFT	SOFT	SOFT	SOFT	10	10	4	4	X	SOFT		
Door Phone		-	-	-	VoIP	X	X	X	X	X	VoIP		
FP Sensor (Platen Area)		16.4 x 19.4mm	15.5 X 19 mm	15.5 X 19 mm	21 x 21mm	16 X 20 mm	16 X 20 mm	14.8 X 17.9mm	14.8 X 17.9mm	14.8 X 17.9mm	X		
Resolution		500dpi	500dpi	500dpi	500 dpi	500 dpi	500 dpi	500 dpi	500 dpi	500 dpi	X		
Dimension (W) X (H) X (D) mm		80 x 195.6 x 23.5 (Upper) / 54.67(Lower)	149.7 x 208 x 89.7mm	149.7 x 208 x 89.7mm	149.5 X 208.5 X46	88 X 175 X 43.5	88 X 175 X 43.5	58 X 187.9 X 51.6	58 X 187.9 X 51.6	58 X 187.9 X 51.6	80 X 153 X 18.2		
FRR /FAR		0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	0.1% / 0.0001%	N/A		
Operating Temperature		-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C	-20 ~ 60°C		



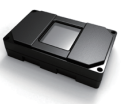

ENROLLMENT SCANNERS

Model	NScan-FA	FOH02	FOH04	VScan-S30MA
Product Image				
Fingerprint Type	Optical	Optical	Optical	Oval Stamp / Seal
Resolution	500dpi	500dpi	500dpi	500dpi
Gray Scale	256 gray	256 gray	256 gray	256 gray
Platen Size ((W X L))	26 x 27 mm	16 X 18 mm	21 x 21 mm	31 x 31 mm
Sensing Area(W X L)	20 x 25 mm	15 X 17 mm	20.3 x 20.3 mm	30 x 30 mm
Auto Sensing	O	O	O	X
Speed	10 frames Per second(fps)	10 frames per second (fps)	15 frames per second (fps)	15 frames/s(Merging)
Interface	USB 2.0(High Speed)	USB 2.0	USB 2.0	USB 2.0 (Data & Power)
Operating Temperature	0°C ~ +50°C	-20°C ~ +60°C	-20°C ~ +60°C	0°C ~ +50°C
Operating Humidity	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing
Dimension (W x H x D)	47.2x81x34.4 mm	74 x 92 x 84 mm	74 x 92 x 84 mm	72 x 58.3 x 120.4 mm
Certifications	EAC, CE, FCC, KC, IP54, FBI PIV + FAP20	KC, CE, FCC, ROHS, WHQL	WHQL, CE, FCC, ROHS, FBI IQS PIV	WHQL, KC
Image Format	ISO 19794-4 WSQ, NFIQ, RAW, BMP	WSQ, NFIQ, RAW, BMP	ISO 19794-4 WSQ, NFIQ, RAW, BMP	ISO 19794-4 WSQ, RAW, BMP
Template Type	VIRDI, ISO 19794-2, ANSI 378	VIRDI, ISO 19794-2, ANSI 378	VIRDI, ISO 19794-2, ANSI 378	VIRDI, ISO 19794-2, ANSI 378
LFD	o	O	O	X
Operating System	Windows, Android, Linux	Windows, Linux	Windows	Windows, Android
Card Type	X	RF: 125KHz proximity card SC: 13.56 MHz smart card	X	X

LIVE SCANNERS

Model	NScan-T	NScan-P
Product Image		
Fingerprint Type	Single Finger/Roll Dual-Finger Four-Finger, Two Thumbs	Single Finger/Roll Four-Finger, Palm, Writer's Palm
Resolution	500dpi	500dpi
Platen Size ((W X L))	96 x 85.8 mm	156 x 145 mm
Image Size (W X L)	81.28 x 76.2 mm	120 x 130 (130x130)mm
Rolling mood Speed	24 frame/s	14 frames/s
Image Quality Standards	FBI IQS Appendix-F	FBI IQS Appendix-F, VCCI
Operating Temperature	0°C ~ +50°C	0°C ~ +40°C
Ingress Protection	IP54	IP43
Operating Humidity	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing
Dimension (W x H x D)	162 x 156.8 x 200 mm	315x144.5x313.2 mm
Weight (Kg)	2.3 (without heater)	8.2 (without heater)
Certifications	WHQL, EAC, CE, FCC, KC	EAC, CE, FCC, KC
Interface	USB 2.0 (Data & Power)	USB 2.0 (Data)
Heater	Optional	O
Operating System	Windows, Android, Linux, java	Windows, Android, Linux

OEM MODULES

Model	NScan-FM	NScan-SM	NSCAN-SDL	FAS06D
Product Image				
Fingerprint Type	Optical	Optical	OPTICAL	OPTICAL
Resolution	500dpi	500dpi	500dpi	500dpi
Gray Scale	256 gray	256 gray	256 gray	256 gray
Template Capacity	1,000 Templates	X	1,000 Templates	1,000 Templates
Log Capacity	X	X	X	X
Enrollment Time	< 1 sec	X	< 1 sec	< 1 sec
Verification Time	< 1 sec	X	< 1 sec	< 1 sec
Host Communication	USB 2.0 (High Speed)	USB 2.0(High Speed)	UART(TTL)	UART(TTL)
Power Consumption (mA)	MAX 270 mA	MAX 90 mA	Standby: Max 110mA Operation: Max 130mA	Standby: Max 100mA Operation: Max 120mA
Supply Voltage	DC 5 ± 5% [V] (USB Power)	DC 5 ± 5% [V] (USB Power)	DC 3.3V ± 0.2V	DC 5V ± 0.2V (S5) DC 3.3V ± 0.2V (S3)
Encryption	Seed 128	Seed 128	Seed 128	Seed 128
Operating Temperature	-20°C ~ +60°C	0°C ~ +60°C	-20°C ~ 60°C	-20°C ~ 60°C
Operating Humidity	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing	10 ~ 90%, non-condensing
Dimension (W x H x D)	62.4x32.6x13.4 mm	53.6x32.6x13.4 mm	53.6 x 32.6 x 13.4	21 x 53 X 27
FRR (False Rejection Rate)	<0.1%	<0.1%	<0.1%	<0.1%
FRA (False Acceptance Rate)	<0.0001%	<0.0001%	<0.0001%	<0.0001%
LFD	o	o	O	O



Security & Convenience

Access & Time Management

Identification

OEM Modules

Mobile Key System

UNIS S/W (Web/App)

VIRDI UNIONCOMMUNITY Co., Ltd

12F, Daemyung Valeon bldg., 127, Beobwon-ro, Songpa-gu, Seoul, 05836, Republic of Korea

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