World's First Spoof Fingerprint Detection Powered by Pulse Signals

UBio-X LiveGuard



Face · Fingerprint
Multimodal Authentication

• Live

Pulse Signal
Liveness Verification

1

KISA Grade 1 Spoof
Fingerprint Defense

Robust Security
& Data Encryption

UBio Your Bio All the Way

Liveness-Enabled Multimodal Biometric Terminal, UBio-X LiveGuard

UBio-X LiveGuard delivers next-level biometric security with advanced facial anti-spoofing technology and the world's first pulse signal (PPG)-powered spoof fingerprint detection algorithm. Built to defend against presentation attacks (PAD) and a wide range of sophisticated spoofing threats, it provides powerful, reliable multimodal authentication for high-security environments.

KISA Level 1 Spoof Fingerprint Defense

KISA
Korea Internet & Security Agency

- Certification Grade: Grade 1 Spoof Fingerprint Resistance
- Authentication Time: 〈 1 sec



* World's First Pulse-Driven Technology, U.S. Patented
Pulse Signal Spoof Fingerprint Detection Technology
(Application No. 18/479,650)

Various Fingerprint Spoofing Detection


Silicone


Gelatin


Conductive Rubber


Film


Paper

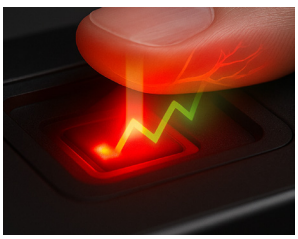
How It Works

Infrared (IR) and green/red LEDs detect pulse signals from fingertip blood flow, which are combined with the fingerprint sensor's anti-spoofing algorithm to accurately identify spoof fingerprints.

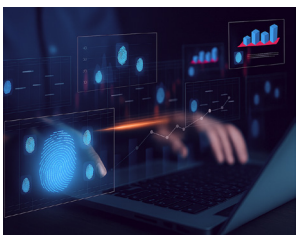
Fingerprint Pattern Recognition


Precise Scanning of Fingerprint Ridge Patterns

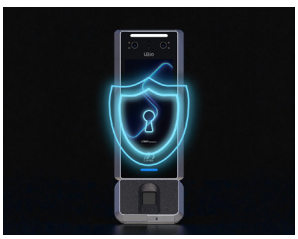
Pulse Signal Detection (PPG)


Measurement of Blood Flow Changes via IR and Green/Red LEDs

Data Fusion Analysis


Fingerprint + Pulse Data Fusion Analysis

Authentication Result Transmission


Result Transmission & Encrypted Log Storage

Fast & Accurate Access Authentication

A high-performance algorithm enables faster, more accurate authentication, even in large-scale workplaces with high user volumes. The high-performance camera also provides a wide field of view, reliably recognizing users of various heights-from adults to children, including wheelchair users.

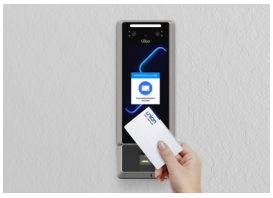
High-Performance Algorithm

- Face: 1:30,000 in 〈1 sec
- Fingerprint: 1:50,000 in 〈1 sec
- Face: Up to 30,000 users
- Fingerprint: Up to 500,000 users





Face



Card



Mobile Card

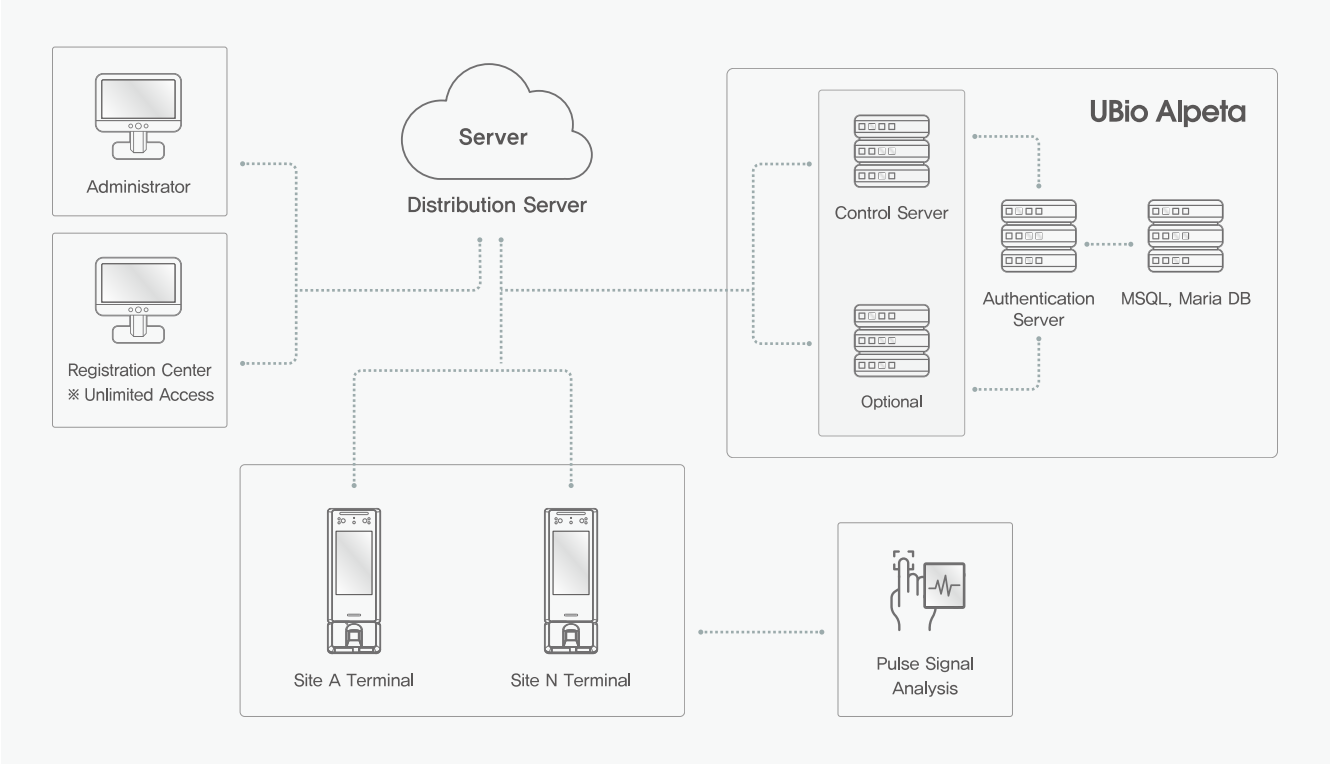


Fingerprint



Password

System Configuraiton



Specification

Model			UBio-X LiveGuard
General	CPU		1.8GHz Quad-Core
	NPU		O (2.3 TOPS)
	MEMORY	Flash	16GB eMMC
		RAM	4GB (LPDDR4)
	LCD	type	5' (TFT IPS LCD)
		Resolution	720 X 1280
	Speaker		Audio Codec 1W
	MIC		Waterproof MIC
	Operating Temperature		-20℃ ~ 60℃
	Operating Humidity		0% ~ 90%, non-condensing
	Weight		600g
	Dimension (W x H x D) mm		92 X 200 X 21
	Temper		✓
	IP Rating		IP55 (IP65 optional)
	IK Rating		IK06
	Certificates		KC / CE / FCC
Biomatrics	Face	Recognition Distance	0.5M ~ 2M
		Matching Speed	<1 sec
		Liveness Detection (Anti-Spoofing)	✓
	FingerPrint	Template	100,000
		Extractor / Matcher	MINEX certified & compliant
		Sensor	Optical Fingerprint Sensor
		Capture Type	Optical
		Auto Sensing	Human Touch Sensor
		Interface	USB 2.0 (5V tolerant input)
		Supply Voltage	DC 5V ± 5%
		Current	Stand by: 100mA ± 10mA / Active: 130mA ± 10mA
		Sensor Size (W x D x H) mm	53.6 x 32.6 x 13.4
RF	RF Read Range	EM	50 mm
		Smart Card	50 mm
		DESFIRE EV1 / EV2 / EV3	45 mm
		FELICA	30 mm
	RF Option	125KHz EM	All in One
		13.56MHz Smart Card	
		Mifare (Plus)	
		Felica	
		ISO14443 A/B	
		ISO 15693	
		DESFIRE EV1 / EV2 / EV3	
		HID Prox	Option
		HID iCLass	Option
X-Key	NFC		Support
	BLE		Support
	HID Mobile Access		To be Supported
Capacity	Face (Based on one face Template per User)	1:N	30,000 (50,000 Option)
		1:1	30,000 (50,000 Option)
		FPR	<0.0001%
		FNR	<0.1%
	Fingerprint (Based on two Fingerprint Template per User)	1:N	100,000
		1:1	1,000,000
		FPR	<0.0001%
		FNR	<0.1%
	Event Log		10,000,000
	Picture Log		20,000
Interface	Ethernet		10 / 100M / 1000M 1 Port
	RS-485		1 Port
	RS-232		2 Port
	Wiegand		IN / OUT 1 Port
	Relay		2 Port
	USB	USB 2.0	Host 1 Port
		USB 2.0	OTG 1 Port (C-Type)
	Wifi		Support
Power	Voltage		DC 15V ~ 24V
	Current		Max 1.5A @ DC15V

Compatible Products

Themal-I2

Integration for Measuring Personnel Temperature

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