



SEPID SYSTEM

Device Specification

Sepid Combo 5 (3200C)



SepidCombo

Multifunctional Authentication Device

Physical Characteristics



Dimensions

196 x 138 x 50



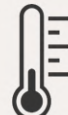
Weight

100g



Material

PC+ABS



Operating Temperature

-10~50 °C



Colors



IP Protection Rate

IP54



Humidity

0~90 %



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Operational Modules

Module	Description
Contactless Smart Card Reader	Refer to Table 1
Fingerprint Scanner	Refer to Table 2
SAM Reader	Refer to Table 3
Contact Smart Card Reader	Refer to Table 3
Display	Refer to Table 4
Camera	Refer to Table 5
Processor	Refer to Table 6
Electrical Interface Port	USB

Contactless Smart Card Reader

Table 1: Contactless Smart Card Reader

Contactless Smart Card Reader	ISO/IEC 14443 A&B, Mifare, Felica NFC Forum tag types: (Jewel, Mifare Ultralight, Felica, Felica lite, Mifare, DesFire) EMV2000 Contactless Smart Card Frequency 13.56MHz +/- 7KHz Distance transaction: Up to 10cm Baud: 106/212/424/848 kbit/s
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Fingerprint Scanner

Table 2: Fingerprint Scanner

Main	Sensor Type	Optical
	Resolution / Gray Scale	500 ppi / 256 levels
	Platen Size	16.5 x 21.0 mm
	Sensing Area	15.2 x 20.3 mm
	Image Size	300 x 400 pixels
	Image Certificate	FBI PIV and FBI Mobile ID FAP 20
	Template Format	Suprema, ISO19794-2, ANSI 378
	Image Format	RAW, BMP, WSQ, ISO 19794-4
	Live Fingerprint Detection	Supported
	IP Rating	IP65(Sensor Surface)
Hardware	Operating Temperature	-10 ~ 50°C
	Operation Humidity	0 ~ 90% non-condensing
	Certification	CE, FCC, KC, RoHS, CB, WEEE, REACH, WHQL
	Dimensions (W x L x H)	59.0 x 32.0 x 13.5 mm
	Weight	30g
Compatibility	Operating System	Windows XP, Vista, 7, 8, 8.1, 10 32/64bit Ubuntu, Debian, Fedora, OpenSUSE, CentOS 32/64bit Android 4.1(Jelly Bean) and Above

Contact Smart Card Reader

Table 3: Contact Smart Card Reader

Contact Smart Card Reader & SAM Slots	ISO 7816 Class A/B/C (5V, 3.0V, 1.8V) Protocol T=0, T=1 EMV2000 contact smart card SAM Slot (2x SAM)
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Display

The touch screen used in the device is also used as a PIN PAD and an individual signature scanner.

Table 4: Touch Screen

LCD	LCD type	Capacitive Touch panel
	Resolution	800 * 400 TFT LCD
	Size	5" inch
KEY PAD	Type	Touch Key-PAD
	Standard	compatible with PCI PTS Standard
Signature Pad	Type	TFT Color LCD Capacitive
	Size	5 " inch
	Show Message	YES
	Resolution	800*400 TFT LCD
	Active Area	120 * 650 mm
	Coordinate accuracy	- + 0.5 mm
Encryption	RSA , ESA	



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Camera

Table 5: Camera

Resolution	5 MP
Image Sensor	Omni-vision OV5640 CMOS
Size	19 mm x 19 mm
Key Features	<ul style="list-style-type: none">- Auto Focus- High Sensitivity- Low Crosstalk- Low Noise- UVC Compliant- Plug & Play
OS Compatibility	Linux, Android, Windows
Serial Communication	3xI2C, 3xSPI, 5xUART
CAN	2
USB Controllers	1
Timer [Number,Bits]	9x32
ADC [Number,Bits]	1x12
GPIO	165
Supply Voltage [Min to Max] V	2.4 to 3.6
Ambient Operating Temperature (Min to Max)	-40 to 85

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Processor

Table 6: Processor

Core type	Arm Cortex-M3
Operating Frequency [Max] (MHz)	120
Flash (KB)	512
SRAM (KB)	96
EEPROM (KB)	4
Serial Communication	3xI2C, 3xSPI, 5xUART
CAN	2
USB Controllers	1
Timer [Number,Bits]	9x32
ADC [Number,Bits]	1x12
GPIO	165
Supply Voltage [Min to Max] V	2.4 to 3.6
Ambient Operating Temperature (Min to Max)	-40 to 85

Software Characteristics

Table 7: Software Characteristics

Operating System	Sepid Native C++ Firmware
SDK	JAVA, C#, Web API
Supported Platforms	Windows
Interface	USB 2.0 High Speed

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Security Characteristics

Table 8: Security Characteristics

Support Power-on Self Check Mechanism to ensure desirable operation

Design Contact Smart Card Reader Slot with minimum possible width to avoid entering Sniffers and External Objects along with the card

Support Tamper prove and Tamper resistance Countermeasures (Providing Details on Countermeasures is subject to signing Non-Disclosure-Agreement)

Periodic Memory Re-Initialization Process

Avoid Storing Customer's Data on Device Memory

Support High Voltage Protection Mechanism

Supporting Random Layout for PIN-PAD, based on which the Key Numbers Position change randomly

Support Side-channel Information Leakage Protections

Support Key management Protocols, Compatible with ISO 11568 and ANSI 9.24 Standards

Equipped with an internal SAM module (inside tamper prove section) to perform encryption and digital signature on data communicated between device and client PC

Support Key Diversification Mechanisms, compatible with ANSI TR-31 Standard

Applying complementary Security countermeasures to ensure high level of device hardening

Support PIN Encryption, Compatible with ISO 9564

Support Device Identity Management Based on Digital Certificate (Store on Internal SAM Module)