Datasheet
Fujitsu PalmSecure Contactless Biometrics Authentication

Award-winning Contactless Authentication Technology Verifies An Individual's Identity by Recognizing Palm Vein Patterns enabling dynamic ID management solutions

Raising the benchmark

Companies looking to revolutionize their ID Management solutions with Biometrics may not always have the appropriate technology that is flexible enough to give them complete control over the several Biometric Profiles that are created.

With Fujitsu PalmSecure Technology, it is possible to design the entire ID Management solution around the same set of Biometric Profiles to be used from standard Time & Attendance solution to Bank ATM Access to Patient Verification to Membership Management to PC Login and enable Logical Access.

About PalmSecure

PalmSecure is a step forward in Biometric technology, which goes beyond the surface and authenticates users on the basis of blood vein pattern recognition.

PalmSecure records the vein patterns that are unique to each individual by emitting near-infrared rays that are absorbed by deoxidized hemoglobin present in blood flowing through a user's palm veins. This causes an image of the palm to be captured as a vein pattern, which is then verified against the user's pre-registered pattern to grant (or deny) access to a physical location or computer network.

PalmSecure is the most ideal choice for public projects involving Biometrics :

- PalmSecure uses the contactless method of scanning which ensures hygiene and resolves any psychological resistance the users may develop for touching the same sensors again in public.
- Since the vein patterns are internal in the body, attempts to forge an identity are extremely difficult, thereby enabling a high level of security.
- Extremely easy to use, takes advantage of the natural placement of the hand.
- Can be integrated and used in multi-factor authentication process.

Features and benefits

Main features	Benefits
Contactless & versatile ■ No need to touch the sensor. Vein Patterns of the open Palm are detected at a distance of 4-6 cm. ■ Wide Range of Applications	■ Hygienic and non-invasive. Stress free to use even for public use. Higher user acceptance. ■ Banking, Healthcare, High Security Areas, Offices, Education Institutes, Logical Access, Vehicles, Membership, many more
High Security ■ Advanced Authentication Algorithm ■ Uses Complex Vein Patterns in the open palm ■ Internal body information, requires active blood flow	■ FAR (False Accept Rate) : 0.00008% ■ FRR (False Reject Rate) : 0.01% ■ Difficult to forge
Speed, Accuracy and Applicability ■ Fast and Easy Enrolment : under 1 minute ■ Fast, Easy and secure Authentication : 1:1000 in 3 seconds ■ Vein Patterns are very stable biometric characteristics and are safe from outside injury	■ Faster throughputs ensures serving larger user base ■ Allows local and server authentication ■ Can be used by everyone from age 5 onwards. 100% enrolment is possible. Ease-of-Use. Simplifies Operations
Innovation, Flexibility and LOw Cost ■ Small form factor : 35(W)x35(D)x27(H) ■ Software Development Kit ■ Low cost and Maintenance	■ Allows to be used in multi-form factors or directly with the PC. ■ Easy integration to create multi-modal solutions ■ Reduced cost of operations
International Common Criteria Certified ■ Certified under the Common Criteria(1) for Information Technology Security Evaluation (ISO15408) as Evaluation Assurance Level 2(2)	■ Makes PalmSecure ideal to serve those customers, such as government agencies and financial institutions, who require advanced security.

Glossary
  (1) **Common Criteria**:
      Common Criteria is a set of established criteria for evaluating and certifying the information security of IT products and information systems. It is currently recognized in 25 countries. Security evaluations based on Common Criteria look at the security performance and reliability (quality assurance) of the target system. The depth and breadth of the evaluation is indicated by its "Evaluation Assurance Level" (see below).
  (2) **Evaluation Assurance Level 2:**
      Under Common Criteria, there are seven Evaluation Assurance Levels in increasing order of stringency. A higher Evaluation Assurance Level means that the security assurance for the Target Of Evaluation (TOE) has been tested over a broader scope, although it does not necessarily indicate a higher level of security. The Evaluation Assurance Level 2 score earned by PalmSecure indicates that it is structurally tested.

Topics

Contactless and Versatile

The contactless system offers many advantages over contact systems, and is one of the key differences from other biometric systems. This feature makes it an ideal technology to be used in public as it resolves any psychological resistance the users may develop for touching the same sensors again in public.

This has enabled PalmSecure technology to be used widely in variety of practical applications across industries like Banking, Healthcare, Retail, Government, High Security Areas, Offices, Education Institutes, Libraries, Clubs, Amusement Parks, Vehicle security, and many more innovative application areas.

High Security

The veins in the palm contain information internal to the human body. There is therefore no risk of being lost or stolen, as there is for cards or fingerprints.

Using the complex vein patterns in the palm and the Advanced Authentication Algorithm, PalmSecure appropriately addresses the Privacy issues of the users and ensures safe use of their biometric profiles in various applications

Speed, Accuracy and Applicability

Palm Vein patters are safe from external injuries and are more stable. This expands the user base from age 5 onwards and can be used for over long time horizons without periodic re-enrolment.

The faster authentication rate allows addressing the larger user base without compromising on the speed and accuracy of authentication

Innovation, Flexibility and Low Cost

The innovative small form factor is incredibly useful in preparing several form factors thereby expanding the scope of its utility. This feature has allowed PalmSecure to be used in ATM, Kiosks, Door Access Solution, or directly with the PC.

Using PalmSecure SDK, it is possible to integrate PalmSecure with other technologies to create multi-modal systems, therefore offering more secure environments and faster throughputs even at very large user base.

The PalmSecure Sensor uses external CPU and Storage therefore offering Scalability of operations as the organization and its user base grows.

International Common Criteria Certified

World's first palm vein-based authentication system and only the third biometric authentication system of any kind, to be certified under this international standard.

In recent years, biometric authentication based on veins, fingerprints, and iris patterns has become widespread in a variety of applications such as PC or business application login, identity verification at ATMs, and facility access control.

Since the Fujitsu Group has brought palm vein authentication to social infrastructure including banking, healthcare, and academic testing systems, it has been called upon by customers such as government agencies and financial institutions outside of Japan to put the device through a third-party security certification process.

Becoming certified under the international standard for IT security, Common Criteria, responds to that call. The Fujitsu Group can tailor solutions using the high-precision, high-security PalmSecure system to meet customer needs.

Technical details

General specifications

Reading system		Reading by near-infrared light	
Scope of capture		Entire Palm (excluding fingers)	
Capturing distance		40 to 60mm	
Drip-proof		Drip-proof structure for the Surface of sensor unit only.	
- Notes		- However, enrollments of vein data or authentication are not recommended in the condition that the Surface of the sensor has a drip - Corresponding to IP41, in the degree of protection of IEC60529 IP	
Material of the Surface of sensor unit		Glass	
Encryption scheme		AES (Length of cryptography key more than 128 bit)	
Authentication Rate	FAR	0.00008%	
	FRR	0.01%	
- Notes		Calculating along the following standard : Conform to International Standards Organization ISO/IEC 19795 (under discussing at ISO/IEC JTC1/SC37 WG5).	
Authentication time	Verification (1:1)	Hand detection	0.2 sec.
		Capture	0.4 sec.
		Verify	0.2 sec.
			(Total 0.8 seconds)
	Identification (1:N)	S-method N＝10 people (20 hands)	
		Hand detection	0.2 sec.
		Capture	0.4 sec.
		Identify	0.9 sec.
			(Total 1.5 seconds)
		F27-method N＝500 people (1000 hands) (Note2)	
		Hand detection	0.2 sec.
		Capture	0.4 sec.
		Identify	2.4 sec.
			(Total 3.0 seconds)
- Notes		- Based on Processor Intel® Pentium®4 3.0GHz/USB2.0 - It is recommended to use S-method when N (the number of hands for enrollment) is limited to 20 hands or less, and to use F27-method when N is 21 hands or more. - For information on identification (S-method / F27-method), refer to "System development guide".	

Compliance with standards

Reliability	MTBF : 830,000 hours Life of unit : 5 years
Electromagnetic wave standard	VCCI ClassB, FCC ClassB, EN ClassB
Safety standard	UL60950-1, CSA C22.2 No.950-1, EN60950-1, CE, TUV, EN60825-1:1994+A1:2002+A2:2001 Class1
Environmental regulation	Conforms to RoHS and WEEE

Installation specifications

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Dimensions		Width 35 X Depth 35 X Height 27 mm	
- Notes		Sensor unit only	
Weight		Below 50 g	
- Notes		Sensor unit only	
Voltage of Power supply		4.4 to 5.4V	
Current consumption		500mA (Max)	
Power consumption		2.5W (Max)	
Power source		Provided by the USB Interface cable	
Host interface		USB2.0 (only Hi speed) is recommended.	
- Notes		USB1.1 (Full Speed) can be performed only when the following conditions are met : - USB controller of host side is UHCI controller. - The number of sensor attached is only one. - Operate with the Palm guide. - Allow the processing speed to slow.	
Interface connector		Series "mini-B" plug (with 5 pins)	
Interface cable		A cable with a length of 1 m is included with this product.	
- Notes		Maximum operable length of cable: 4 m (Please use a connecter with qualified USB) <Recommended connector at the Sensor side> ACON brand : MNC12--5K5210 or equivalent	
Installation environment	**Installation angle**	Full direction	
	Temperature	0 to 60 degrees Celsius	
	Humidity	10 to 90%RH (Non-condensing)	
	Lighting environment	Authentication	Enrollment
	Natural light (sunlight)	Below 3000 lux	Below 2000 lux
	Fluorescent light	Below 3000 lux	Below 2000 lux
	Incandescent / Halogen lamps	Below 700 lux	Below 500 lux
- Notes		Avoid direct sunlight. Avoid direct light on the Surface of sensor unit from incandescent or halogen lamps.	
Anti-static (ESD)		8kV (Indirect, Direct, Contact)	

More information

Fujitsu platform solutions

In addition to Fujitsu PalmSecure, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

Dynamic Infrastructures
With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure-as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

Computing Products
www.fujitsu.com/global/services/computing/

Software
www.fujitsu.com/software/

More information

Learn more about Fujitsu PalmSecure, please contact your Fujitsu sales representative, Fujitsu business partner,

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or visit our website.
http://www.fujitsu.com/in/services/palmsecure/

Fujitsu green policy innovation

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