

# SMART CARDS SMART CARD READERS FP SCANNERS



FOXBASE TECHNOLOGIES PRIVATE LIMITED

**PRODUCT REFERENCE GUIDE 2013**

## Introduction

The primary business areas that have been envisaged are smart card, Biometrics, Security Surveillance and UHF related applications. The prospective sector that these can be applied in are, security/access controls, transport & Logistics, healthcare, Identity authentication etc.

With respect to the business proposition, the goal is to create technology solutions using multiple technologies for each segment with Identity and Security as the primary technology application area.

## Mission Statement

Provide individuals and businesses, technology solutions to enhance experiences and enable smarter decisions. In doing so distinguish ourselves as pioneers in each business we operate in.

## Company Goals and Objectives

- a. To be a market leader in smart card based technology solutions
  - i. Achieve INR 45cr turnover in 5 years
  - ii. Command 20% premium for services as compared to the competition
  - iii. Sustain growth plan through organic growth
  - iv. Repeat client and referrals to provide at least 30% of the business
- b. To provide employees the infrastructure and environment that promotes innovation and timely completion of tasks
  - i. Reward timely completion of tasks through performance measures
  - ii. Reward and encourage innovation through awards and recognition programs
  - iii. Give access to the latest technology products and tools to employees
  - iv. Encourage open communication and a collegiate atmosphere among staff
- c. To operate in the government as well as private domain, having a Global footprint
  - i. Greater than 40% of revenues to be from the Government domain through PPP route
  - ii. Greater than 20% of revenues from overseas clients



ISO 9001:2008

Turnkey Solution

Project Management

Distribution



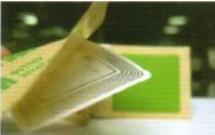
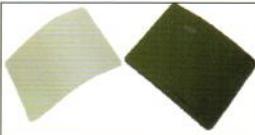
## SMART LABELS IN HF AND UHF

											
Antenna Size	Finished Size	Mifare Ultralight	Mifare S50	Mifare S70	Icode1	Icode2 Sli	Ti256	Ti2048	PicoPass	UcodeGen2	IMPIN] Gen2
26 x 31	30 x 35	YES	YES	YES	YES						
25 dia	27 dia	YES	YES	YES	YES	YES	YES				
23 x 38	28 x 45	YES	YES	YES	YES	YES	YES	YES	YES		
19 x 78	23 x 82	YES	YES	YES	YES	YES	YES	YES			
36 x 48	50 x 50	YES	YES	YES	YES	YES					
45 x 45	50 x 50	YES	YES	YES	YES	YES	YES	YES			
47 x 78	54 x 86	YES	YES	YES	YES	YES	YES	YES	YES		
28 dia	30 dia	YES	YES	YES	YES	YES	YES	YES			
32 x 32	35 x 35	YES	YES	YES	YES	YES	YES	YES	YES		
40 x 40	45 x 45	YES	YES	YES	YES	YES	YES	YES	YES		
33 x 63	40 x 70	YES	YES	YES	YES	YES	YES	YES	YES		
18 x 42	20 x 44	YES	YES	YES	YES	YES	YES	YES			
30 dia x 26	30 dia x 26	YES	YES	YES	YES	YES	YES	YES			
44 x 76	54 x 86									YES	YES
18 x 38	19 x 39									YES	YES
13 x 93	15 x 95									YES	YES
18 x 80	20 x 83									YES	YES
9 dia	11 dia	YES	YES	YES	YES	YES	YES				
15 x 26	18 x 28	YES	YES	YES	YES	YES	YES	YES			

## PREPRINTED SMART CARDS



## NFC TAGS

MODEL	DESCRIPTION	PRODUCT
METAL TAG S50	NXP Contactless 13.56MHz based on Mifare Technology. 1KB, 1024 bits, ISO 14443-A	 
METAL TAG FM1108	FUDAN Contactless 13.56MHz based on Mifare Technology. 1KB, 1024 bits, ISO 14443-A	
NTAG203	NXP Contactless 13.56MHz based on Mifare Technology. 1KB, 1024 bits, ISO 14443-A Chip NXP NTAG203	 
ULTRALIGHT TAG DIA 50mm	NXP Contactless 13.56MHz Mifare 1KB, 512 bits, ISO 14443-A Chip Ultralight MFO	
NXP S50 TAG DIA 30mm	NXP Contactless 13.56 MHz Mifare 1KB, 4096 bits, ISO 14443-A	
FM1108 TAG DIA 30mm	FUDAN Contactless 13.56MHz based on Mifare Technology. 1KB, 1024 bits, ISO 14443-A	



## CLAMSHELL CARD

Dimension: 86x54x1.8mm  
Standard Color White

IC Available : EM4100, EM4102, EM4550, NXP Higtag1, Hitag2, HitagS256, HitagS2048



## ISO CARD

Dimension: 86x54x0.8mm  
Material: PVC or PET

Offset, Screen, Personalization, Serial Number Printing

IC Available125Khz : EM4100, EM4102, EM4550, NXP

IC Available13.56 Mhz : NXP Mifare S50, NXP Mifare S70, Mifare DesFire4KB/8KB, Icode1, Icode2 Sli, PicoPass, Higtag1, Hitag2, Magnetic Strip, Higtag1, Hitag2, HitagS256, HitagS2048

IC Available868-915 Mhz : Ucode Gen2, Imping, Monza, Alien



## COMBI CARD/DUAL FREQUENCY

Dimension: 86x54x0.8mm

Material: PVC or PET

Offset, Screen, Personalization, Serial Number Printing



## RFID ABS KEYFOBS

AB0001 43.7x30x5x5.3	AB0002 35.3x28x6.4	AB0003 40.5X32x4.2	ABS004 46X28X5	AB0005 53x37.5x9.8	AB0006 52.5x35.2x9	AB0010 34.8x23x3.9	AB0016 53.9x33.8x5	AB0017 37x30x5
ABD17 17dia x 3.5	ABD22 22dia x 2.4	ABD30-1 30dia x 3	ABD30-3 30dia x2 x 3mm Hole	ABD3051 30dia x2 x 5mm Hole	ABD50-1 50dia x2 x 5mm Hole	ABD50-2 50dia x5 x 5mm Hole	ABD30-4 30dia x 4	ABD35 35dia x 4 3.8mm Hole

IC Available125Khz : EM4100, EM4102, EM4550, NXP Higtag1, Hitag2, HitagS256, HitagS2048

IC Available13.56 MHz : NXP Mifare S50, NXP Mifare S70, Mifare DesFire4KB/8KB, Icode1, Icode2 Sli, PicoPass,

## RFID LAUNDRY TAGS

Physical Parameter

Diameter ±0.5mm	9	10	11	12	13	14	15	16	17	18	20	22	24	26	28	30
Thickness ±0.3mm	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Weight ± 5%	.25	.35	.40	.45	.55	.60	.70	.85	.90	.95	1.20	1.50	1.70	2.00	2.40	2.50

IC Available125KHz: EM4100, EM4102, EM4550, NXP Higtag1, Hitag2, HitagS256, HitagS2048

IC Available13.56 MHz: NXP Mifare S50, NXP Mifare S70, Mifare DesFire4KB/8KB, Icode1, Icode2 Sli, PicoPass,

IC Available868-915 Mhz : Ucode Gen2, Imping, Monza, Alien

## RFID WRISTBAND AND SPECIAL TAGS

Silicon Wristband	Screw Tags	Ferrite Core Inlay	Metal Tag	Glass Tag

IC Available125Khz : EM4100, EM4102, EM4550, NXP Higtag1, Hitag2, HitagS256, HitagS2048

IC Available13.56 MHz : NXP Mifare S50, NXP Mifare S70, Mifare DesFire4KB/8KB, Icode1, Icode2 Sli, PicoPass,

IC Available868-915 Mhz : Ucode Gen2, Imping, Monza, Alien



## Fingkey Hamster

### Features

- » It verifies the authorized user with its fake fingerprint identification function (Fingkey Hamster II DX / Fingkey Hamster III)
- » It makes accurate user identification with its excellent algorithm.
- » It has high durability that ensures robustness.
- » Dry fingers are also well sensed.
- » Automatically activated when finger placed on sensor
- » It is usable at various angle you wish to use (Fingkey Hamster III)
- » Applicable to personal identification device through fingerprint identification in diverse fields.
- » Security for computer and network
- » e-commerce
- » Security for banking and financial institutes for User Authentication
- » Medical information system
- » Other fields requiring user authentication (SSO, CRM, electronic payment and etc)

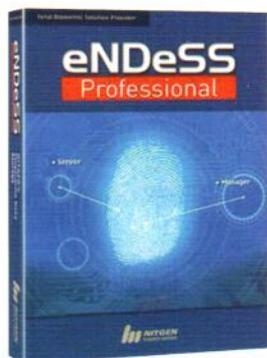


### Features

Item	Fingkey Hamster DX	Fingkey Hamster II DX	Fingkey Hamster III
Product Image			
FP Sensor		OPU06 (Optical type)	
Dimension	27.2×40.4×73.3(mm)	61×80×47(mm)	30×48×68(mm)
Interface		USB1.1 / 2.0	
Resolution / Image Size		500(DPI) / 248×292(pixels)	
Capture Time		Avg. 300 msec	
Operation Temperature		0 - 40 [°C]	
Operation Voltage		DC 5 [V]	
Supported OS		above Windows2000	
Auto-on Function	○	○	○
LFD Function	x	○	○
Certificate		CE, FCC, WHQL	

### Software Package

#### eNDeSS Professional



» eNDeSS Professional is a PC security software solution using fingerprint recognition technology, providing the unique security function meeting CC (Common Criteria).

- Windows Log-on
- Authentication DB management
- File encryption
- Screen Saver
- Log Management

※ CC (Common Criteria) : A framework in which computer system users can specify their security requirements, vendors can then implement and/or make claims about the security attributes of their products, and testing laboratories can evaluate the products to determine if they actually meet the claims.





## U.are.U® 4500 Reader USB Fingerprint Reader

### Target Applications

- Desktop PC security
- Mobile PCs
- Custom applications

### Features

- Blue LED
- Small form factor
- Excellent image quality
- Superior ESD resistance
- Encrypted fingerprint data
- Latent print rejection
- Counterfeit finger rejection
- Rotation invariant
- Rugged
- Works well with dry, moist or rough fingerprints
- Compatible with Windows® 7, Vista, XP Professional, 2000 and Windows Server 2000, 2003, 2008

### Key Specifications

- Pixel resolution: 512 dpi (average x, y over the scan area)
- Scan capture area: 14.6 mm (nom. width at center) 18.1 mm (nom. length)
- 8-bit grayscale (256 levels of gray)
- Reader size (approximate): 65 mm x 36 mm x 15.56 mm
- Compatible with USB 1.0, 1.1 and 2.0 (Full Speed) specifications
- Indoor, home and office use



### Product Description

The U.are.U 4500 Reader is an elegant, powerful fingerprint identity machine. With an executive-class look and feel, the U.are.U 4500 Reader is perfect for power users and shared environments. Its design is sleek and compact to conserve valuable desk space but it stays right where you put it because of its nice heft and special undercoating.

The U.are.U 4500 radiates an attractive blue glow that provides an unobtrusive presence in low light environments and also ensures that it does not compete with alarm colors in settings such as healthcare.

To use, you simply place your finger on the glowing window, and the reader quickly and automatically scans your fingerprint. For superior user feedback, a red "flash" indicates that a fingerprint image has been captured. On-board electronics calibrate the reader and encrypt the scanned data before sending it over the USB interface.

DigitalPersona readers utilize optical fingerprint scanning technology to achieve excellent image quality, a large capture area and superior reliability. The U.are.U 4500 Reader and DigitalPersona® Fingerprint Recognition Engine have an unmatched ability to authenticate even the most difficult fingerprints accurately and rapidly regardless of placement angle.

The U.are.U 4500 Reader can be purchased for use with DigitalPersona Pro Workstation, DigitalPersona Pro Kiosk, DigitalPersona Online, DigitalPersona Personal or any of the DigitalPersona SDK packages. Whether you are an enterprise customer, a system integrator or a home user, DigitalPersona's fingerprint authentication solutions provide a natural extension to your security system and applications.



**SecuGen USB fingerprint readers** are made with the industry's most rugged and advanced optical sensors using patented SEIR™ technology to give you the highest quality in fingerprint biometrics

## SecuGen Hamster™ Plus

A high-performance and versatile fingerprint reader with Auto-On™

### Features

- High-quality, rugged, maintenance-free optical fingerprint sensor with ultra-precise 500 DPI resolution
- Auto-On automatically turns on sensor when it detects a finger
- Hardened fingerprint contact area that's resistant to scratches, impact, corrosion and electrostatic discharge (ESD)
- Compact and ergonomically designed to work with any finger or thumb
- Integrated finger guide
- Removable, weighted stand
- USB connection



### What is Auto-On™?

*Auto-On is a feature that allows the SecuGen Hamster Plus to automatically detect the presence of a finger when it's placed on the sensor. With Auto-On enabled\*, you can quickly and easily identify yourself, making fingerprint biometrics even more convenient to use.*

\* Auto-On is built in to the sensor but needs to be enabled by the software application

## Benefits of Using SecuGen USB Fingerprint Readers

SecuGen USB fingerprint readers are easy to install and use with software applications designed with fingerprint identification or verification functions that let your fingerprints act like digital passwords that cannot be lost, forgotten or stolen. SecuGen readers provide consistent performance and security for a growing number of applications and are supported

by a wide range of operating systems and computing environments.

SecuGen readers are backed by the industry's best quality guarantee and years of field use and proven performance under extreme conditions. This helps avoid the cost and inconvenience of field replacements of damaged units made by other sensor manufacturers.

When used for biometric authentication as part of an overall security program, SecuGen readers can help reduce the hassles of password overload, decrease the risks of security breaches, improve accountability and add true non-repudiation, all while making it more convenient and intuitive for almost any user.

## SecuGen Sensors are Known for their High Quality

### Durable

SecuGen fingerprint sensors are very rugged and feature a virtually indestructible sensor prism. From the sensor surface to the internal lens and electronic components, SecuGen sensors are designed to be strong and dependable to deliver consistent performance in indoor, outdoor and other harsh environments.

### Accurate

SecuGen sensors are very accurate thanks to a patented optic design that produces distortion-free images from which data points are extracted for matching. Higher quality images mean greater precision, less false rejection and acceptance, and better overall performance.

### Maintenance-free

Unlike semiconductor-based sensors and other optical sensors in the market, SecuGen sensors are made with a hard quartz-like material that needs no coatings but resists scratches, ESD, corrosion and other stress. The optic parts are tightly assembled so that if the sensors are ever dropped, there is no need for recalibration.

### Cost-effective

SecuGen designs, develops and manufactures its own fingerprint sensors, which are built to last. SecuGen guarantees the best product quality in the industry, which translates into savings by eliminating costly replacements and losses from system downtime.

## Typical Applications

SecuGen readers work with a large variety of software products available through 3rd party developers for applications such as:

- PC, network, enterprise, or internet security
- E-commerce and electronic transactions
- Bank and financial systems
- Medical information systems
- Labor and attendance tracking
- Any password-based application ...

### General

Dimensions (W x L x H)	27 x 40 x 73 mm (without stand)
Weight	100 g (without stand)
Operating Temperature	0° to 40° C
Operating Humidity	< 90% RH, noncondensing
Cable Length	1800 mm
Certification / Compliance	FCC, CE, RoHS

### Communication

Interface	USB 1.1 (Bulk mode), USB 2.0 (Full speed compatible)
Communication Speed (max)	12 Mbps
Image Capture Speed (continuous)	0.4 seconds
Image Capture Speed (snapshot)	0.80 seconds
Latent Fingerprint Check Delay	0.01 second

### Optical

Sensor	FDU03™
Image Resolution	500 DPI ± 0.2 %
Image Size	260 x 300 pixels
Platen Size	16.1 mm x 18.2 mm
Effective Sensing Area	12.7 mm x 14.9 mm
Image Grayscale	256 shades (8-bit gray level)
Image Type	Non-lossy
Distortion (nonlinear)	< 0.1 %
Sensing Prism Hardness	750 Hk (6.8 Mohs)
Light Source	Red LED
Lifetime (typical)	60,000 hours
Ambient Light Tolerance	5,000 Lux



# ACOS SMART CARDS

- e-Healthcare
- Network Security
- e-Banking
- Loyalty Program
- Transportation
- Access Control

## Smart Cards & Smart Card Operating Systems

ACS develops and provides smart cards with its smart card operating system (ACOS) as intellectual property. Often noted for their 'secure and elegant' architecture, ACOS cards uncover the powerful potential of smart cards, enabling a single card to support multiple applications, from physical/network access control to payment applications. The security level requirement of these applications is, in turn, met by ACOS cards via multilevel secured access hierarchy.

One of these cards, the ACOS5 Cryptographic Smart Card, is especially designed for RSA public-key cryptographic operations that are essential in smart card PKI, digital signature, etc.

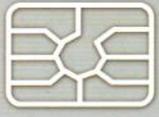


PRODUCT CODE	ACOS3	ACOS3X	ACOS3 Combi/Contactless	ACOS6
<b>Form Factor</b>				
Card - Contact Only	•	•		•
Card - Contactless Only			•	
Card - Contact and Contactless			•	
Token - Contact Card and USB Full Speed				
<b>Communication Speed</b>				
Contact interface 9,600 - 223,200 bps	•	•	•	•
Contactless interface 106,000 - 848,000 bps			•	
<b>Memory</b>				
EEPROM Size	32KB/72KB	256KB	8KB	64KB
<b>Protocol</b>				
Contact interface T = 0	•	•	•	•
Contactless interface T = CL			•	
<b>Certifications / Compliance</b>				
Contact Interface ISO 7816 - 1/2/3	•	•	•	•
ISO 7816 - 4				•
ISO 7816 - 8/9				
Contactless Interface ISO 14443 Type A			•	
Common Criteria EAL5+			•	
PBOC 2.0 e-Deposit/e-Purse (China)			(Chip Level)	
Ministry of Construction (China)				
<b>File Systems</b>				
Transparent/Binary File	•	•	•	•
Linear Fixed Record	•	•	•	•
Linear Variable Record				•
Cyclic File				•
<b>Cryptographic Capabilities</b>				
DES/3DES	•	•	•	•
3K3DES				
AES - 128 bits				
AES - 192 bits				
AES - 256 bits				
RSA - 512 to 4096 bits (in 256-bit step)				
SHA-1, SHA-256				
Mutual Authentication	•	•	•	•
Secure Messaging	•	•	•	•
Random Number Generator (FIPS 140-2)	•	•	•	•
<b>EEPROM Endurance</b>				
100,000 Read/Write Cycles	•	•		•
500,000 Read/Write Cycles			•	
<b>Data Retention</b>				
10 Years	•	•	•	•





# Smart Cards & Smart Card Operating Systems



ACOS6-SAM	ACOS7 Combi/Contactless	ACOS10	ACOS10 Combi/Contactless	ACOS5-64 NEW	CryptoMate64 NEW
•	•	•	•	•	•
•	•	•	•	•	•
32KB	8KB	32KB	8KB	64KB	64KB
•	•	•	•	•	•
•	•	•	•	•	•
•	(Chip Level)	•	(Chip Level)	(Chip Level)	(Chip Level)
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•



# PC-LINKED CONTACT READERS

- e-Healthcare
- Network Security
- e-Banking
- Loyalty Program
- e-Government
- Access Control

## PC-Linked Smart Card Readers

ACS develops and provides high quality and reliable PC-linked smart card readers, which are based on various industry standards such as PC/SC (Personal Computer/Smart Card) and EMV (Europay, MasterCard and Visa). ACS PC-linked readers are ideal for providing individual authentication for security applications such as e-government services, e-commerce, banking services, healthcare management, digital signature, internet lottery and mobile telecommunication applications.



PRODUCT CODE	ACR38U-I1	ACR38U-H1	ACR38U-J1	ACR38U-N1
<b>Physical Characteristics</b>				
Dimensions (mm)	72.2 x 69.0 x 14.5	71.5 x 80.0 x 80.0	65.5 x 68.2 x 13.7	58.0 x 20.0 x 13.7
Weight (g)	65.0	174.0	65.0	12.0
<b>Host Interface</b>				
USB (Full Speed)	•	•	•	•
<b>Contact Smart Card Interface</b>				
ISO 7816	•	•	•	•
MCU Cards, T=0 and T=1	•	•	•	•
Memory Cards	•	•	•	•
Smart Card Read/Write Speed (kbps)	344	344	344	344
Card Form	Full-Sized	Full-Sized	Full-Sized	Full-Sized
Card Slot	1	1	1	1
<b>Built-in Peripherals</b>				
LED	1	2	1	1
Buzzer				
SAM Slot				
<b>Certifications/Compliance</b>				
PC/SC	•	•	•	•
CCID	•	•	•	•
WHQL	•	•	•	•
EMV Level 1	•	•	•	•
FIPS 201				
TAA				
MTBF (hours)	500,000	500,000	500,000	500,000
REACH	•		•	
VCCI	•	•	•	•
CE, FCC	•	•	•	•
RoHS	•	•	•	•
<b>Supported OS Platform</b>				
Windows 98	•	•	•	•
Windows 2000, XP, Vista, 7	•	•	•	•
Windows Server 2003, Server 2008, Server 2008 R2	•	•	•	•
MAC	•	•	•	•
Linux	•	•	•	•
Android	•	•	•	•





# PC-Linked Smart Card Readers



PC-LINKED CONTACT READERS



ACR33U

ACR38F

ACR38K

ACR38T-D1

ACR3801

ACR38U-A4

103.5 x 85.0 x 59.9  
310.0

125.0 x 101.5 x 25.5  
140.0

445.0 x 160.0 x 40.0  
650.0

67.6 x 23.0 x 8.0  
12.0

63.5 x 88.0 x 17.0  
145.0

73.0 x 96.5 x 19.0  
95.0

•

•

•

•

•

•

•  
•

•  
•

•  
•

•  
•

•  
•

•  
•

344

344

344

344

344

250

Full-Sized

Full-Sized

Full-Sized

SIM-Sized

Full-Sized

Full-Sized

2

1

1

1

1

1

3

1

1

1

1

1

•

1

•

•

•

•

•

•

•

•

•

•

•

•

500,000

500,000

500,000

500,000

500,000

500,000

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•

•



# PC-LINKED CONTACTLESS READERS

- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program

## Contactless Readers

ACS offers a series of contactless smart card readers/writers to address the growing popularity of and demand for contactless applications. Hinged upon the 13.56 MHz RFID technology, these readers are developed to support various contactless protocols such as ISO 14443 Type A and B, Mifare®, FeliCa and NFC, to facilitate their use in a wide range of applications.



PRODUCT CODE	ACR122U	ACR122T	ACR122S	ACR122L / ACR1222L	ACR1251U
<b>Physical Characteristics</b>					
Dimensions (mm)	98.0 x 65.0 x 12.8	75.0 x 30.0 x 9.9	120.5 x 72.0 x 20.4	133.0 x 88.0 x 20.0 (Main Body Only)	98.0 x 65.0 x 12.8
Weight (g)	70.0	15.0	150.0	195.0 (Main Body) 245.0 (Base Stand)	70.0
<b>Operation Modes</b>					
PC-Linked	•	•	•	•	•
Stand-Alone					
<b>Host Interface</b>					
USB (Full Speed)	•	•		• (ACR1222L)	•
Serial (RS232)			•	• (ACR122L)	
External Power Adapter				• (ACR122L)	
<b>Contactless Smart Card Interface</b>					
ISO 14443 Type A and B	•	•	•	•	•
ISO/IEC 18092 (NFC)	•	•	•	•	•
Mifare	•	•	•	•	•
FeliCa	•	•	•	•	•
Smart Card Read/Write Speed (kbps)	106, 212, 424	106, 212, 424	106, 212, 424	106, 212, 424	106, 212, 424
Reading Distance (mm)	50	30	50	50	50
FeliCa Mobile Devices					
Extended APDU Support					
<b>Contact Smart Card Interface</b>					
ISO 7816					
MCU Cards, T=0 and T=1					
Memory Cards					
Smart Card Read/Write Speed (kbps)					
Card Form					
<b>Upgradeability</b>					
USB Firmware Upgrade				• (ACR1222L)	•
<b>Built-in Peripherals</b>					
LCD Resolution				128 x 32	
Graphical LCD for Multiple Languages				• (16 alphanumeric characters x 2 lines)	
Keypad					
LED	1	1	2	4	1
Buzzer	•		•	•	
SAM Slot			1	3	1
Tamper Switch					
Real Time Clock					
Secure Mifare Key Storage					
Embedded NFC <Text / URI / Smart Poster> Application	Upon Request		Upon Request	Upon Request	Upon Request
<b>Certifications/Compliance</b>					
PC/SC	•	•		• (ACR1222L)	•
CCID	•	•		• (ACR1222L)	•
WHQL	•	•		• (ACR1222L)	•
VCCI	•	•	•	•	•
CE, FCC	•	•	•	•	•
RoHS	•	•	•	•	•
qPBOC / EMVCo CL L1					
Germany nPA					
EMV Levels 1 and 2					
NFC Forum Certification Mark					•
<b>Supported OS Platforms</b>					
Windows 98	•	•	•	• (ACR122L)	•
Windows 2000, XP, Vista, 7	•	•	•	•	•
Windows Server 2003, Server 2008, Server 2008 R2	•	•	•	•	•
Windows CE	•	•			
MAC	•	•		• (ACR1222L)	•
Linux	•	•	•	•	•
Android	•	•		• (ACR1222L)	•



# Contactless Readers



NEW



NEW



NEW



ACR1222U-J4

ACR1283L

ACR123

ACR1281U nPA

ACR1281U-C1/ACR1281S-C1

ACM1281S1-Z8

85.0 x 54.0 x 10.0  
40.0

133.0 x 88.0 x 20.0 (Main Body Only)  
195.0 (Main body)  
245.0 (Base stand)

159.0 x 100.0 x 24.0 (Main Body Only)  
275.0 (Main body)  
245.0 (Base stand)

120.5 x 72.0 x 20.4  
150.0

120.5 x 72.0 x 20.4  
150.0

70.0 x 45.3  
27.7

212  
10

106, 212, 424, 848  
50

106, 212, 424, 848  
100

106, 212, 424, 848  
50

106, 212, 424, 848  
50

106  
50

115.2  
Full-Sized

128 x 32  
● (16 alphanumeric characters x 2 lines)

128 x 64  
● (16 alphanumeric characters x 4 lines)

12-Key

2

4

4

2

2

1

4

3

1

Upon Request

Upon Request (ACR1281U-C1)

● (ACR1281U-C1)  
● (ACR1281U-C1)  
● (ACR1281U-C1)

● (ACR1281U-C1)  
● (ACR1281U-C1)

PC-LINKED CONTACTLESS READERS





- e-Healthcare
- Network Security
- e-Banking & e-Payment
- Access Control
- e-Government
- Public Key Infrastructure

### Smart Card / Fingerprint Readers

The ACS line of smart card / fingerprint readers combines the smart card reader and fingerprint sensor technologies into one secure platform. By cooperating with leading biometric sensor and algorithm suppliers, ACS provides a high level of security and convenience for applications within the government, corporate, financial and healthcare sectors.



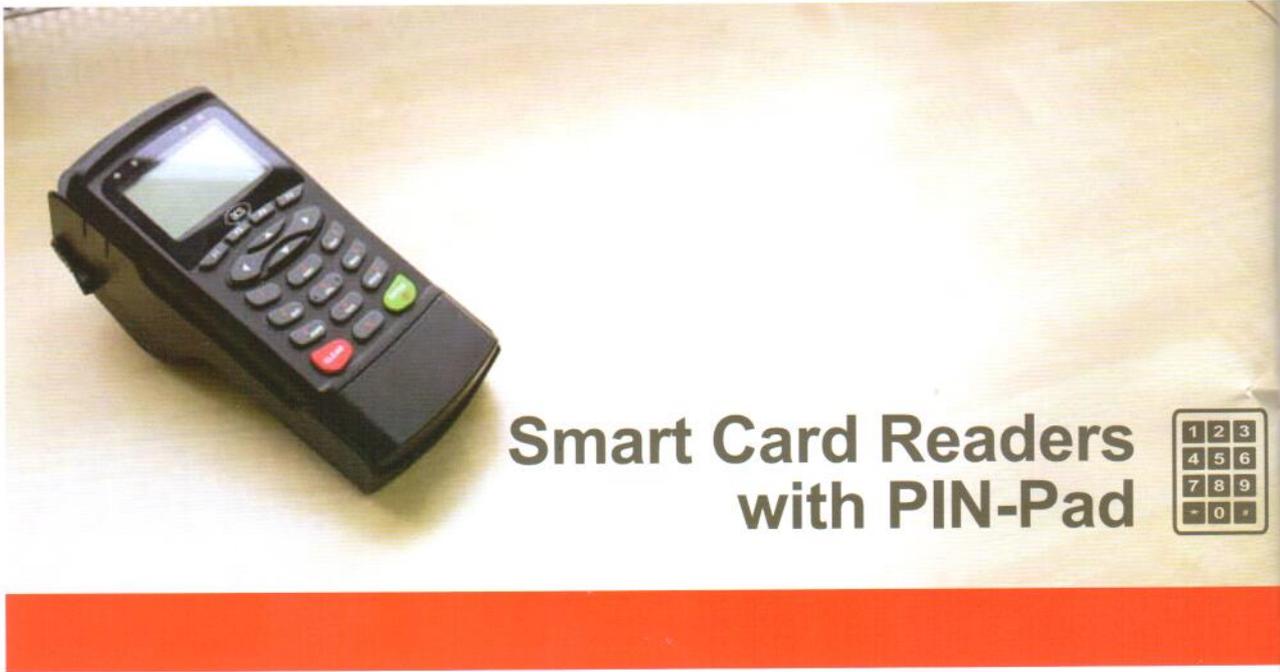
# PC-LINKED COMBI READERS



PRODUCT CODE	AET62	AET65
<b>Physical Characteristics</b>		
Dimensions (mm)	121.5 x 54.0 x 28.5	85.0 x 70.0 x 35.0
Weight (g)	170.0	194.0
<b>Host Interface</b>		
USB (Full Speed)	•	•
<b>Contact Smart Card Interface</b>		
ISO 7816		•
MCU Cards, T=0 and T=1		•
Memory Cards		•
Smart Card Read/Write Speed (kbps)		250
Card Form		Full-Sized
<b>Contactless Smart Card Interface</b>		
ISO 14443 Type A and B	•	
ISO/IEC 18092 (NFC)	•	
MiFare	•	
FeliCa	•	
Smart Card Read/Write Speed (kbps)	106, 212, 424	
Reading Distance (mm)	30	
<b>Fingerprint Scanner Interface</b>		
Fingerprint Capture	Strip/Swipe	Strip/Swipe
Active Sensor Size (mm)	9.6 x 0.2	9.6 x 0.2
Image Resolution (dpi)	508	508
Template Extraction and Matching (via default UPEK algorithm)	Onboard	Onboard
Match Mode	1:1	1:1
3rd-Party Fingerprint Algorithm Support	•	•
<b>Built-In Peripherals</b>		
LED	1	2
SAM Slot	Upon Request	•
<b>Certifications/Compliance</b>		
PC/SC	•	•
CCID	•	
WHQL	•	•
BioAPI 1.1	•	•
Windows Biometric Framework	•	•
CE, FCC	•	•
RoHS	•	•
<b>Supported OS Platforms</b>		
Windows XP, Vista,	•	•
Windows 7	•	•
Windows Server 2003, Server 2008, Server 2008 R2	•	•
Linux	Upon Request	



# SMART CARD READER TERMINALS



- e-Healthcare
- Network Security
- Loyalty Program
- e-Government
- Transportation
- e-Banking

### Smart Card Readers with PIN-Pad

ACS develops and provides secure PIN-pad smart card readers, with each having a built-in keypad, an LCD and a host of other features. This type of reader is ideal for applications where a simple PC-linked smart card reader does not meet the user's security requirements, such as PIN entry and the confirmation of transaction details.



# SMART CARD READER TERMINALS



PRODUCT CODE	ACR83U	ACR89U
<b>Physical Characteristics</b>		
Dimensions (mm)	81.0 x 46.0 x 12.0	181.0 x 77.0 x 30.5
Weight (g)	65.0	235.0
<b>Processor</b>		
Processor	8 Bit	32 Bit
Embedded Platform		Free RT
<b>Operation Modes</b>		
PC-Linked	•	•
Stand-Alone		•
<b>Host Interface</b>		
USB (Full Speed)	•	•
Serial (RS232)		•
External Power Adapter		•
<b>Contact Smart Card Interface</b>		
ISO 7816	•	•
MCU Cards, T=0 and T=1	•	•
Memory Cards		•
Smart Card Read/Write Speed (kbps)	250	250
Card Form	Full-Sized	Full-Sized
Card Slot	1	2
<b>Contactless Smart Card Interface</b>		
ISO 14443 Type A and B		Optional
MiFare		Optional
Felica		Optional
Smart Card Read/Write Speed (kbps)		106, 212, 424, 848
Reading Distance (mm)		30mm at 106kbps
<b>Memory</b>		
User-Programmable		512 KB
Firmware Memory		384 KB
<b>Upgradeability</b>		
On-Board Firmware Upgradeable		•
<b>Built-In Peripherals</b>		
LCD (pixel)	96 x 16	128 x 64
Graphical LCD for Multiple Languages	• (16 alphanumeric characters x 2 lines)	• (21 alphanumeric characters x 8 lines)
Keypad	14-Key	20-Key
LED		4
Buzzer		•
Tamper Switch		•
Real Time Clock		•
Rechargeable Battery (Li-ion)		•
SAM Slot		3
Detachable Thermal Printer		Optional
<b>Certifications/Compliance</b>		
PC/SC	•	•
PC/SC 2.0 Part 10 - Secure PIN Entry	•	•
CCID	•	•
WHQL	•	•
EMV Level 1	•	•
CE, FCC	•	•
RoHS	•	•
<b>Supported OS Platforms</b>		
Windows 98	•	•
Windows 2000, XP, Vista, 7	•	•
Windows Server 2003, Server 2008, Server 2008 R2	•	•
MAC	•	•
Linux	•	•
Android	•	•



# SMART CARD READERS WITH STORAGE



e-Government  
e-Banking and e-Payment  
Public Key Infrastructure  
Network Security  
GSM Management  
VoIP  
Data Storage

## PC-Linked Readers with Mass Storage

ACS has realized the importance of integrating flash memory into smart card readers, hence the development of PC-linked readers with mass storage. Designed for SIM-sized smart cards (Plug-in cards) access and data or application storage, it is ideal for GSM solutions such as GSM management software and VoIP applications, electronic payment systems, home banking, and transportation.



# SMART CARD READERS WITH STORAGE



PRODUCT CODE	ACR100I	ACR101I
<b>Physical Characteristics</b>		
Dimensions (mm)	76.0 x 26.0 x 23.4	75.0 x 26.0 x 11.7
Weight (g)	20.0	15.0
Form Factor	Extractable USB Connector	Extractable USB Connector
<b>Host Interface</b>		
USB (Full Speed)	•	•
<b>Contact Smart Card Interface</b>		
ISO 7816	•	•
MCU Cards, T=0 and T=1	•	•
Memory Cards	•	•
Smart Card Read/Write Speed (kbps)	344	344
Card Form	SIM-Sized	SIM-Sized
<b>Mass Storage</b>		
Built-In Flash Memory (GB)	2	
Expandable Memory		2GB MicroSD Card
<b>Additional Features</b>		
Partitionable Memory	•	
Contactless Feature	Embedded Mifare 1K Chip	Embedded Mifare 1K Chip
<b>Certifications/Compliance</b>		
PC/SC	•	•
CCID	•	•
HID	Upon Request	Upon Request
WHQL	•	•
MTBF (hours)	500,000	500,000
VCCI	•	•
CE, FCC	•	•
RoHS	•	•
<b>Supported OS Platforms</b>		
Windows 98	•	•
Windows 2000, XP, Vista, 7	•	•
Windows Server 2003, Server 2008, Server 2008 R2	•	•
MAC	•	•
Linux	•	•
Android	•	•



# DYNAMIC PASSWORD GENERATORS



## Dynamic Password Generators



Dynamic One-Time Password

Remote Authentication

e-Banking & e-Payment

Digital Signature

### Dynamic Password Generators

ACS develops and provides highly secure and reliable dynamic password generators that comply with industry standards such as EMV 2000 Level 1 (Europay, MasterCard® and Visa), MasterCard® CAP (Chip Authentication Program), MasterCard® PLA (Pin-less/Person-less Authentication) and VISA DPA (Dynamic Passcode Authentication). The device can be used in a variety of payment and banking applications, and its offline mode inhibits hackers from accessing information in the card. It is a portable device that needs no software installation, making it easily transportable for both home and office use.



# DYNAMIC PASSWORD GENERATORS



PRODUCT CODE	APG8201	APG8202	APG8205
<b>Physical Characteristics</b>			
Dimensions (mm)	95.0 x 60.0 x 11.0	95.0 x 60.0 x 11.0	85.0 x 58.0 x 5.0
Weight (g)	49.0 (Device) 40.0 (USB Cable)	49.0	27.0
<b>Operation Modes</b>			
PC-Linked	•		
Stand-Alone	•	•	•
<b>Host Interface</b>			
USB (Full Speed)	•		
<b>Contact Smart Card Interface</b>			
ISO 7816	•	•	•
MCU Cards, T=0 and T=1	•	•	•
Card Form	Full-Sized	Full-Sized	Full-Sized
Smart Card Read/Write Speed (kbps)	250	250	250
<b>Built-In Peripherals</b>			
LCD Resolution	96 x 16	96 x 16	96 x 16
Graphical LCD for Multiple Languages	• (16 alphanumeric characters x 2 lines)	• (16 alphanumeric characters x 2 lines)	• (16 alphanumeric characters x 2 lines)
Keypad	20-Key	20-Key	20-Key
Buzzer	•	•	•
Battery	2 x Replaceable CR2032	2 x Replaceable CR2032	2 x Replaceable CR2016
Tamper Evident Seal	•	•	•
Calculator and E-Purse Function	•	•	•
<b>Certifications/Compliance</b>			
MasterCard® Chip Authentication Program (CAP)	Upon Request	•	•
MasterCard® PIN/Personless Authentication (PLA)	Upon Request	•	•
VISA® Dynamic Passcode Authentication (DPA)	Upon Request	•	•
PC/SC	• (PC-Linked)		
PC/SC 2.0 Part 10 - Secure PIN Entry	• (PC-Linked)		
CCID	• (PC-Linked)		
WHQL	• (PC-Linked)		
EMV Level 1	•		
CE, FCC	•	•	•
RoHS	•	•	•
<b>Supported OS Platforms</b>			
Windows 98	•		
Windows 2000, XP, Vista, 7	•		
Windows Server 2003, Server 2008, Server 2008 R2	•		
MAC	•		
Linux	•		
Android	•		



## HICO and LOCO MAGNETIC CARD ENCODER

### Feature

LOCO/HICO (3000E--4000E) MAGNETIC CARDS  
 SUPPORT ISO, IBM, DIN, ANSI ETC  
 EXCELLENT ADAPTATION, GOOD RELIABILITY,  
 LONG-LIFE MAGNETIC HEAD  
 READ/WRITE MAGNETIC CARDS WITH ALL TRACK 1/2/3



### Application

BANKING SYSTEM  
 TAX SERVICE SYSTEM  
 SECURITIES SYSTEM  
 MEMBER, LOYALTY, ATTENDANCE, TRANSACTION MANAGEMENT  
 SOFTWARE INCLUDED FOR WIN-2000, XP & WIN 7  
 SDK AVAILABLE

Specification	
Card Standard	ISO 7811 / 2 ISO 7816
Track Position	ISO 1 (IATA) ISO 2 (ABA) ISO 3 (MINTS)
Power Supply	DC +24V ; ±5%
Operation Speed	10 ~ 150cm/sec (read) 10 ~ 100cm/sec (write)
Interface	RS-232 or USB
Weight Approx	1.4 Kg
Dimension	214.5mm(L)*66mm(W)*59mm(H)

## Magnetic Stripe Card Reader Series

Fast decoding & lower error rate  
 Able to be connected with PC or combined with POS keyboard  
 Interfaces: TTL, K/B wedge, RS232 & USB  
 Read both LOCO and HICO cards



Magnetic	Sensor: Magnetic Head Encoding Energy: 300 oersted
Electrical	Operating Voltage: 5V ± 5% Power Consumption: 5mA without Decoder, or 45mA with Decoder
Reading Performance	Card Standards: ANSI, ISO, ABA Track: Single ,Dual Speed: 3-40 ips Output Interface: TTL, RS232, K/B Wedge
Dimension	100x39x33mm (LxWxH)
Life Time	300,000 passes minimum



<b>CRONUS Prime</b>	Time Attendance software with integrated Payroll on MS-Access database for small sized companies.
<b>CRONUS Ultra</b>	Time Attendance software on MySQL database for mid to large sized companies / factories / hospitals with Email and SMS options.
<b>CRONUS School</b>	Time Attendance software on MySQL database specially designed for Schools with Email and SMS options.
<b>CRONUS Finder</b>	Application to capture data from UHF Readers for CRONUS software.
<b>BS Series Downloader</b>	Device Management software on MS-Access database. Single software to work on all models of BS T&A devices.
<b>Payroll Pro</b>	Payroll software on MySQL database. Can be used as stand-alone or integrated with CRONUS Ultra.
<b>Club ERP</b>	The complete membership Club Management software with KOT/BOT, Monthly Billing, Reminder, Inventory, Facility Management on MSSQL database.
<b>E-Ticket</b>	Electronic Ticketing on Smart Cards, RFID, Barcode.
<b>KLIENTA e-Cash</b>	E-Cash software for Cash Billing, Debit Card, E-Purse, Food Court solution.
<b>KLIENTA Identity</b>	Patron Identification software on MS-Access database.
<b>CMS</b>	Smart card based Cafeteria/Canteen Management software on MS-Access database. Can be used as touch screen application also.
<b>Loyal</b>	Smart card based Loyalty Management software on MS-Access database.
<b>VMS</b>	Standard Web cam based Visitor and Vehicle Management software on MS-Access database.
<b>AICTE RegSoft</b>	Software for capturing and printing finger prints of personnel. Integrated with DP4500 finger print scanner.
<b>TrakCenter</b>	UHF / Microwave RFID based Software for Asset Tracking.



## Other Product Lines:

- Time Attendance & Access Control
- CCTV Cameras & IP Cameras
- UHF and Active RfID

#13, 'Rahat', Coles Road, Frazer Town,  
Bangalore - 560005, India.  
Tel: 080-41512500 / 41216500  
[www.foxbase.in](http://www.foxbase.in)  
[info@foxbase.in](mailto:info@foxbase.in)

### Branches at:

- New Delhi
- Mumbai
- Kolkata

