



**Advanced Card Systems Ltd.**  
Card & Reader Technologies



# ACOS3-B/D/G

MICROPROCESSOR CARD

**A Product Presentation**



# Rundown

1. Product Overview
2. Product Features
3. Comparison Chart
4. Product Applications
5. Q & A





# Product Overview

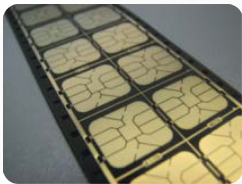
# Product Overview



## ACOS3 Series

Versatile ACS Card Operating Systems version3 Smart Card

Contact interface  
[32/72KB EEPROM Size]



Module

Combi interface  
[8KB EEPROM Size]



Full-Sized Card

Contactless interface  
[8KB EEPROM Size]



Full-Sized Card



Full-Sized Card



SIM-Sized Card





# Product Features



# What are the Key Features of ACOS3 Series?

## Contact card

- Large EEPROM memory – 32KB or 72KB
- ISO 7816 – 1-3 Compliance
- ISO-7816 8 - contact module
- Protocol T=0
- Configurable ATR
- Backward compatible with ACOS2
- Fast and configurable communication speed up to 223,200bps

## Combi card

- Supports both contact and contactless interface by the same chip
- 8KB EEPROM memory
- ISO 7816 1-3 Compliance
- ISO 14443 1- 4 & ISO 14443-A Compliance
- Protocol T=CL
- Data transfer rate supports up to 848kbps

## Contactless card

- 8KB EEPROM memory
- ISO 14443 1- 4 & ISO 14443-A Compliance
- Protocol T=CL
- Data transfer rate supports up to 848kbps

## Other features

- Supports Binary file & linear fixed record file system
- Strong Cryptographic Capabilities: DES/3DES/Secure Messaging with MAC
- ACOS6 SAM (Secure Access Module) availability





# Comparison Chart

# Comparison Chart

Category		ACOS3	ACOS3 Combi*	ACOS5/ CryptoMate	ACOS6	ACOS6-SAM
Product Code		ACOS3-B/D	ACOS3-G	ACOS5-B/ ACOS5T-A	ACOS6-C	ACOS6S-B
Modules						
ISO 7816 compliant 8-contact module		✓	✓	✓	✓	✓
Communication Speed						
Contact	9,600 bps (default)	✓	✓	✓	✓	✓
	14,400 bps	✓	✓		✓	✓
	28,800 bps	✓	✓		✓	✓
	115,200 bps	✓	✓	✓	✓	✓
	223,200 bps	✓	✓		✓	✓
Contactless	106kbps/ 212kbps/ 424kbps/848kbps		✓			
EEPROM Size						
User Memory (byte)		32/72K	8K	32K	64K	32K

Remark: ACOS3 Contactless card has the same contactless features of ACOS3 Combi card



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Product Code		ACOS3-B/D	ACOS3-G	ACOS5-B/ ACOS5T-A	ACOS6-C	ACOS6S-B
Protocol						
Contact	T = 0	✓	✓	✓	✓	✓
Contactless	T = CL		✓			
ISO standards						
Contact	ISO 7816 – 1/2/3	✓	✓	✓	✓	✓
	ISO 7816 – 4			✓	✓	✓
	ISO 7816 – 8/9			✓		
Contactless	ISO 14443-1/2/3/4		✓			
	ISO 14443 Type A		✓			



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Product Code	ACOS3-B/D	ACOS3-G	ACOS5-B/ ACOS5T-A	ACOS6-C	ACOS6S-B
File Systems					
Directory File			✓	✓	✓
Transparent (Binary File)	✓	✓	✓	✓	✓
Linear Fixed Record	✓	✓	✓	✓	✓
Linear Variable Record			✓	✓	✓
Cyclic File			✓	✓	✓
Security Keys					
User, Admin & Application Specified PIN Support	✓	✓	✓		
DES/ 3DES	✓	✓	✓	✓	✓
3KDES					✓
Customizable PIN & Key Codes				✓	✓



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Product Code		ACOS3-B/D	ACOS3-G	ACOS5-B/ ACOS5T-A	ACOS6-C	ACOS6S-B
Cryptographic Capabilities						
DES/ 3DES		✓	✓	✓	✓	✓
3KDES					✓	
AES-128 bits				✓		✓
RSA-512, 1024, 2048 bits				✓		
SHA – 1,256, 512				✓		
Secure Messaging		✓	✓	✓	✓	✓
FIPS140-2 compliant Random Number Generator					✓	✓
Authentication (MAC)	With Terminal	✓	✓	✓	✓	✓
	With ACOS3/ACOS6				✓	✓
	With Mifare Ultralight C/ DESFire/ DESFire EV1					✓
EEPROM Endurance						
100,000 write/erase cycles		✓			✓	✓
500,000 write/erase cycles			✓	✓		



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Product Code	ACOS3-B/D	ACOS3-G	ACOS5-B/ ACOS5T-A	ACOS6-C	ACOS6S-B
Applications					
E-government E.g. National ID, Health Card, etc.			PKI Application, Multilevel secured access hierarchy	Multi-Purse in one application, Multilevel secured access hierarchy	
Logical & Physical Access Control E. g. Enterprise Security, Time attendance, etc.	Corporate Security/ Identification, Microsoft Windows Logon	Corporate Security/ Identification, Microsoft Windows Logon	Corporate Security/ Identification, Microsoft Windows Logon	Corporate Security/ Identification, Microsoft Windows Logon	Security Access Module (SAM)
Banking and Financial E.g. Online banking, insurance, stock trading, etc.	Network Security, Secure Messaging	Network Security, Secure Messaging	PKI Application, Network Security, Secure Messaging		Security Access Module (SAM), Secure Messaging
Loyalty and Retail E.g. Cashless retail payment, customer loyalty, etc.	E-Payment, Customer Loyalty	E-Payment, Customer Loyalty	E-Payment, Customer Loyalty	E-Payment, Customer Loyalty	Security Access Module (SAM)
Transportation E.g. Automatics fare collection, etc.					Security Access Module (SAM)



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# Product Applications

# In what areas can we apply ACOS3?



Network Security



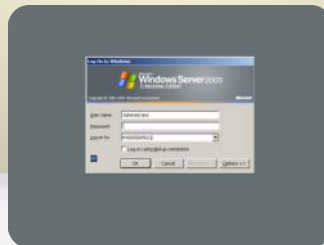
Loyalty



Payment system /  
e-Purse



Corporate Security



Windows Logon  
(Custom)



Physical Access Control





# How to Use ACOS3 - Overview

## Sample Scenario: Student Card Application



### Student ID (ACOS3 Card)



#### Information stored

e.g.:

- 1.) Student Name
- 2.) Sex
- 3.) Class
- 4.) e-purse amount
- 5.) Library record

SAM cards stored inside device  
for mutual authentication

Authenticate the student cards inserted,  
as well as the data received from them,  
and prove to the cards the authenticity of  
the terminal



Smart Card Reader  
(e.g. ACR38)

### School Services



Computer Center

- Printing services payment
- Computer Login

Library



- Borrow books
- Record transferred to library database



# Ordering Information

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Products	Description
ACOS3-B1AACSA1162 ACOS3-D1AACSA1160	Contact Micro-processor card with 32/72KB EEPROM, glossy, PVC
ACOS3-G1KACSA1170	Combi Micro-processor card with 8KB EEPROM, glossy, PVC
ACOS3-G1LACSA1170	Contactless Micro-processor card with 8KB EEPROM glossy, PVC
ACOS3-B2AACSA1162 ACOS3-D2AACSA1160	Micro-processor card with 32/72KB EEPROM, plunge SIM size, glossy, PVC
ACOS3-B3AACSA1162 ACOS3-D3AACSA1160	Micro-processor card module with 32/72KB EEPROM
ACOS6S-B2AACSA4080	Micro-processor based secure access module card with 32K EEPROM, plunge SIM size, glossy

# Thank You!!!

*More information on:*

*<http://www.acs.com.hk/index.php?pid=product&id=ACOS3>*

