Advanced Card Systems Ltd.
Card & Reader Technologies

ACOS3
Microprocessor Card

A Product Presentation

Rundown

1. Product Overview
2. Product Features
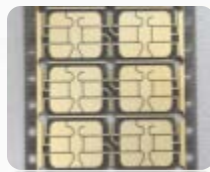3. Comparison Charts
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Product Overview

Product Overview

ACOS3 Series
Versatile Smart Card Operating System from ACS

Contact Interface [32 KB/72 KB EEPROM Size]	Contactless Interface [8 KB EEPROM Size]	Combi Interface [8 KB EEPROM Size]

Module

Full-Sized Card

Full-Sized Card

Full-Sized Card

SIM-Sized Card

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Product Features

What are the Key Features of ACOS3 Series?

Contact Card

- Large EEPROM memory – 32 KB or 72 KB
- ISO 7816 Parts 1-3 compliant
- Protocol T=0
- Configurable ATR
- Fast and configurable communication speed up to 223 Kbps

Combi Card

- Supports both contact and contactless interface by the same chip
- 8 KB EEPROM memory
- ISO 7816 Parts 1-3 compliant
- ISO 14443 Parts 1- 4 & ISO 14443-A Compliant
- Protocol T=CL (for Contactless Interface)
- Data transfer rate supports up to 848 Kbps

Contactless Card

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

Other Features

- Supports binary file and linear fixed record file systems
- Strong Cryptographic Capabilities: DES/3DES/Secure Messaging with MAC
- ACOS6-SAM (Secure Access Module) compatibility

Comparison Charts

Comparison Chart

Category		ACOS3	ACOS3 Combi*	ACOS3X
Product Code		ACOS3-B/D	ACOS3-G	ACOS3X-E
Communication Speed				
Contact	9,600 BPS - 223,100 BPS	✓	✓	✓
Contactless	106,000 BPS - 848,000 BPS		✓	
EEPROM Size				
User Memory		32 KB/72 KB	8 KB	256 KB
Protocol				
Contact	T = 0	✓	✓	✓
Contactless	T = CL		✓	

ACOS3 Contactless card has the same contactless features of ACOS3 Combi card.

Comparison Chart

Category		ACOS3	ACOS3 Combi*	ACOS3X
ISO Standards				
Contact	ISO 7816 – 1/2/3	✓	✓	✓
Contactless	ISO 14443-1/2/3/4		✓	
	ISO 14443 Type A		✓	
File Systems				
Transparent (Binary File)		✓	✓	✓
Linear Fixed Record		✓	✓	✓
Security Keys				
Configurable User, Admin and Application PIN		✓	✓	✓
Cryptographic Capabilities				
DES/3DES		✓	✓	✓
Secure Messaging		✓	✓	✓
Mutual Authentication		✓	✓	✓

ACOS3 Contactless card has the same contactless features of ACOS3 Combi card.

Comparison Chart

Category	ACOS3	ACOS3 Combi*	ACOS3X
EEPROM Endurance			
100,000 write/erase cycles	✓		✓
500,000 write/erase cycles		✓	
Applications			
e-Government and e-Healthcare (e.g., Identification, Healthcare ID, Social Security ID, etc.)	Identification, Healthcare ID, Social Security ID	Identification, Healthcare ID, Social Security ID	Identification, Healthcare ID, Social Security ID
Logical and Physical Access Control (e.g., Enterprise Security, Corporate ID, Time and Attendance, etc.)	Corporate ID, Door Access ID, Network Security	Corporate ID, Door Access ID, Network Security	Corporate ID, Door Access ID, Network Security
Loyalty and Retail (e.g., Cashless Retail Payment, Customer Loyalty, etc.)	e-Payment, Customer Loyalty	e-Payment, Customer Loyalty	e-Payment, Customer Loyalty

ACOS3 Contactless card has the same contactless features of ACOS3 Combi card.

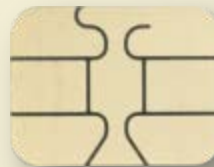# Product Applications

In what applications can we use ACOS3?

Loyalty

Network Security

Payment System/
e-Purse

Corporate Security

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. Gender
3. Class
4. e-Purse amount
5. Library record

SAM cards are stored inside the device for mutual authentication

Authenticate the data received from the student card inserted, and prove to the cards the authenticity of the terminal

Smart Card Reader (e.g., ACR1281)

School Services

Computer Center

- Printing services payment
- Computer Login

- Borrow books
- Record transferred to library database

Library

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How to Use ACOS3 - Overview
Sample Scenario: Loyalty Application

Customer submits Loyalty Card application form

Application is processed in Card Registration Terminal

Loyalty Card (ACOS3) is issued

Information stored

e.g.:

1. Customer Name

2. Gender

3. Points Earned

Redemption Terminal checks accumulated points and converts to gift items or electronic cash

Loyalty Terminal updates the accumulated points on card and records transactions on the terminal

Customer makes purchases and presents card to earn points

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Thank You!

For more information, visit:

http://www.acs.com.hk/en/products/19/acos3-microprocessor-card/