1. Product Overview
2. Product Feature
3. Product Value
4. Product Application
5. Q & A
Product Overview
ACR128 Dual Interface Reader

Belonging to the Contactless Product Family – an extension to the product line while also supporting Contact interface

Multi-application reader designed to interface with a PC for conventional smart card applications
Product Features
What are the Key Features of ACR128?

- **Smart Card Interface**
  - PICC (Contactless)
  - SAM, ICC (Contact)

- **Device Firmware Upgradeable**
  Through RS232 upgrade cable

- **High-Speed Transaction**
  106 kbps – 848 kbps (Max)

- **Supported Card Types**
  - ISO 14443 Type A & B
  - Mifare Classic
  - ISO7816 Class A, B cards

- **User Controllable Peripherals**
  - Bi-Color LED
  - Buzzer (on request)

- **Protocols & Standards**
  - ISO7816 T= 0 & 1 Contact
  - ISO 14443 Parts 1-4
  - Native T=CL
  - PCSC and CCID
  - USB V2.0 (12 Mbps)

- **Intelligent Support**
  - Hybrid and Combi Cards

- **Others/Misc**
  - Power saving modes
  - Auto PPS (PICC)
PC/SC Standard

- A specification that can facilitate the interoperability necessary to allow ICC*/PICC* to be effectively utilized in PC environment
- Offers common PC programming interfaces and control mechanisms, like PC/SC application

*(Integrated Circuits Card)*

*(Proximity Integrated Circuit(s) Card)*
Intelligent Support on Combi and Hybrid Cards

• For Combi Card, if it is inserted into the contact card slot, ICC interface will be used and PICC interface will be disabled, as well as PSSC Polling function for PICCs.
• For Hybrid Card, if it is inserted into the contact card slot, both ICC and PICC interfaces will be used to access the Hybrid card.

Combi card = ONE IC chip shares two interfaces
Hybrid card = TWO IC chips for two interfaces
Power saving mode

- Antenna power is only turned on if required
- Most of time the antenna is turned off
- User is able to control the period of time for turning the antenna on/off
- For ACR120, the antenna is always turned on
Auto PPS (PICC)

- Whenever a PICC is recognized by the reader
- Change the communication speed between the PCD and PICC by the Maximum Connection Speed
- The Maximum Connection Speed depends on the card types
• ACR128U is built based on a more advanced architecture
• Suitable for high speed transactions requirement
• Suitable for highly secure environment
ACR128U PCSC SAM Interface
ACR128U PCSC ICC Interface
ACR128U PCSC PICC Interface

PCSC Layer

ISO 7816 Parts 1-4 + SAM and ICC Interfaces

T = CL & T = 1 Emulation

ISO 14443 Parts 1-4 + PICC Interface

SAM (Socket)

ICC (Landing Type Acceptor)

PICC (Built-In Antenna)
What are the Key Benefits of ACR128?

**Save Costs**
Single reader provides additional design and cost-saving benefits for systems integrators and card users.

**High Security**
SAM on board (Contact Interface)

**PICC Support**
Supports both Type A and B cards

**High-Speed Transaction**
Baud rate up to 848 Kbps (contactless)

**Contemporary Styling & Durability**
Easy to replace SAM
Card alignment tray for contactless card
Landing type contact connector

**Ease of integration**
PCSC interface
Native T=CL support

**Ease of Technology (Migration/Upgrade)**
Quick and easy migration from contact to contactless technology
Firmware upgradable
In what areas can we apply ACR128?

- Transportation
- Payment System (ePurse, etc.)
- Electronic Passport (ICAO)
- Campus Facility Management
- Network Access
- Physical Access Control
Sample Scenario: Electronic Passport
Sample Scenario: Key Diversification

ACOS6 SAM Card inserted in the device

UID: DC 71 46 96
Default key: FF FF FF FF FF FF

PRI_KEY = 00 .. 00 (16 zeros)

DIV_KEY = 30 FB 9B DF 2E 62
Becomes the authentication key for the MIFARE card.
Thank You!!!

More information on: