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ACR128
Dual-Interface Reader

A Product Presentation

Rundown

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Product Overview

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?

Intelligent Support
Hybrid and Combi Cards

User-Controllable Peripherals
LED
Buzzer

Smart Card Interfaces
PICC (Contactless)
SAM, ICC (Contact)

Others/Misc
Power-Saving Modes
Auto PPS (PICC)

Device Firmware Upgradeable
via RS232 Upgrade Cable

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

Protocols & Standards
ISO 7816 T= 0 & 1 Contact
ISO 14443 Parts 1-4
Contactless
Native T=CL
PCSC and CCID
USB V2.0 (12 Mbps)

Supported Card Types
ISO 14443 Type A & B
Mifare
ISO 7816 Class A, B

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Product Features

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)

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Product Features

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 PC/SC 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

Product Features

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

Product Features

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
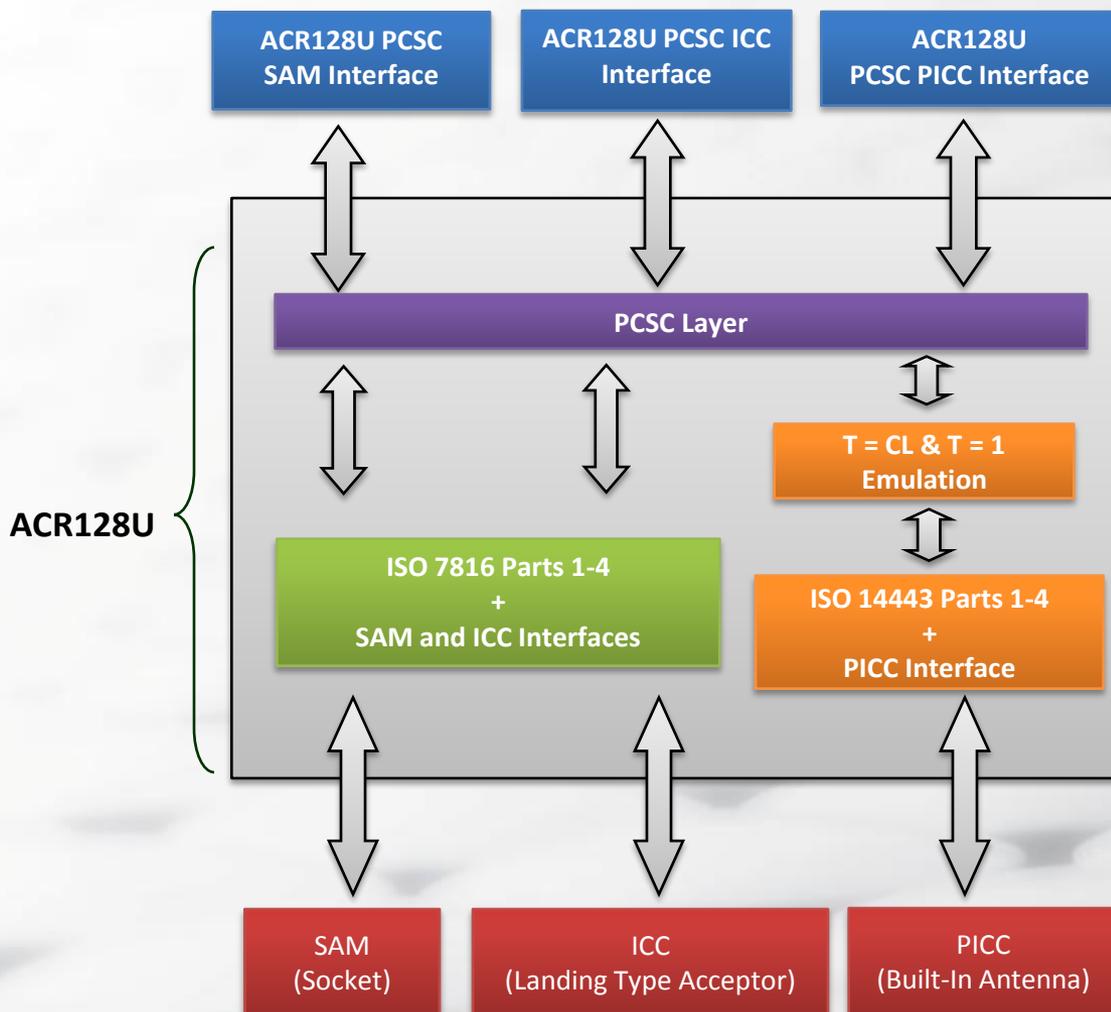- The Maximum Connection Speed depends on the card types

Product Features

- ACR128U is built based on a more advanced architecture
- Suitable for high speed transactions requirement
- Suitable for highly secure environment

ACR128 Architecture

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ACR128U PCSC SAM Interface

ACR128U PCSC ICC Interface

ACR128U PCSC PICC Interface

ACR128U

PCSC Layer

T = CL & T = 1 Emulation

ISO 7816 Parts 1-4
+
SAM and ICC Interfaces

ISO 14443 Parts 1-4
+
PICC Interface

SAM
(Socket)

ICC
(Landing Type Acceptor)

PICC
(Built-In Antenna)

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Product Value

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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

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Product Application

In What Areas can We Apply ACR128?

Transportation

Payment System (ePurse, etc.)

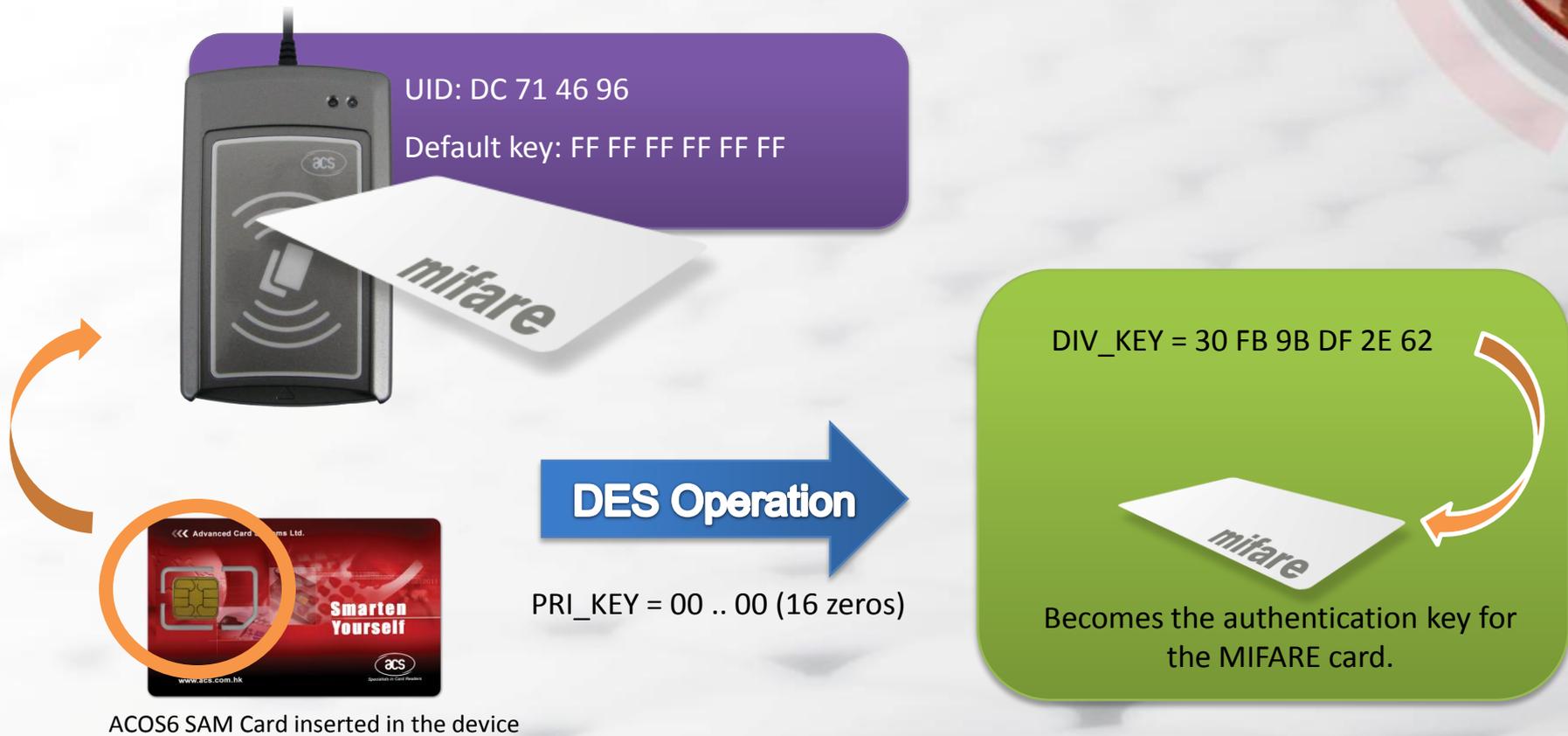Campus Facility Management

Electronic Passport (ICAO)

Network Access

Physical Access Control

How to Use ACR128 - Overview
Sample Scenario: Electronic Passport

Software

+

Entry records from e-Passport will reflect on the counter/terminal's screen.

How to Use ACR128 - Overview
Sample Scenario: Key Diversification

UID: DC 71 46 96

Default key: FF FF FF FF FF FF

DIV_KEY = 30 FB 9B DF 2E 62

DES Operation

PRI_KEY = 00 .. 00 (16 zeros)

Becomes the authentication key for the MIFARE card.

ACOS6 SAM Card inserted in the device

Thank You!!!

More information on:

http://www.acs.com.hk/acr128.php