ACM39U-Y3 Smart Card Reader Module
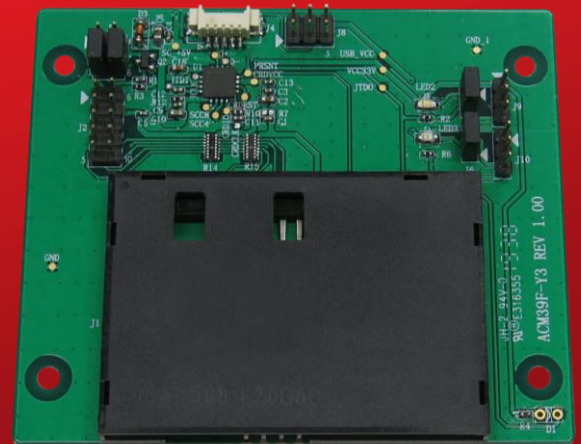
Technical Specifications V1.00

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1.0. Introduction

The ACM39U-Y3 provides a solution for secured access control by employing the globally recognized ACR39 core. It comes in module form to enable easy implementation of smart card-based solutions in embedded systems. The ACM39U-Y3 uses the latest microchip technology, bringing you high security for your confidential files in a convenient and easy way.

1.1. Smart Card Reader

The ACM39U-Y3 supports ISO 7816 Class A, B, and C smart cards. It also works with memory cards and microprocessor cards with T=0 and T=1 protocol. It features a USB Full Speed interface and a smart card read/write speed of 600 Kbps. This highly durable device can last for at least 100,000 card insertion cycles.
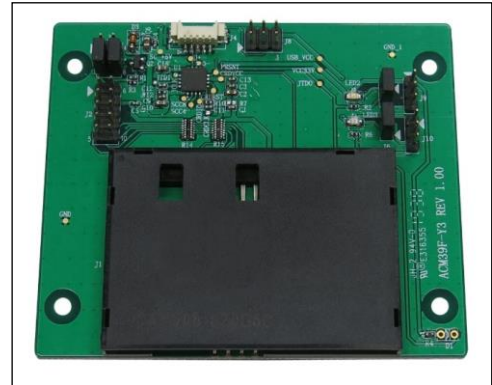
1.2. Ease of Integration

The ACM39U-Y3 is easy to install and use with various environments. Being PC/SC and CCID–compliant, its drivers are compatible with operating systems such as Windows®, Linux®, and Mac OS®. In addition, the ACM39U-Y3 can also be integrated with systems running the Android™ platform with versions 3.1 and later.

With its various features, the ACM39U-Y3 is a powerful component that is ideal for Security, e-Banking, e-Payment, and e-Government applications.

2.0. Features

- USB Full Speed Interface
- Plug and Play – CCID support brings utmost mobility
- Smart Card Reader:
  - Contact Interface:
    - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) cards
    - Supports CAC (Common Access Card)
    - Supports SIPRNET Card
    - Supports J-LIS Card
    - Supports microprocessor cards with T=0 or T=1 protocol
    - Supports memory cards
    - Supports PPS (Protocol and Parameters Selection)
    - Features Short Circuit Protection
- Application Programming Interface:
  - Supports PC/SC
  - Supports CT-API (through wrapper on top of PC/SC)
- Supports Android™ 3.1 and later[1]
- Compliant with the following standards:
  - EN 60950/IEC 60950
  - ISO 7816
  - EMV™ Level 1 (Contact)
  - PC/SC
  - CCID
  - CE
  - FCC
  - RoHS
  - REACH
  - Microsoft® WHQL

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[1] PC/SC and CCID support are not applicable

3.0. Supported Card Types

3.1. MCU Cards

The ACM39U-Y3 works with MCU cards following either the T=0 or T=1 protocol. It also works with CAC cards, making it ideal for US PIV and PKI applications.

3.2. Memory-based Smart Cards

The ACM39U-Y3 works with several memory-based smart cards such as:

- Cards following the I2C bus protocol (free memory cards) with maximum 128-byte page with capability, including:
  - Atmel®: AT24C01/02/04/08/16/32/64/128/256/512/1024
  - SGS-Thomson: ST14C02C, ST14C04C
  - Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- Cards with intelligent 1-kilobyte EEPROM with write-protect function, including:
  - Infineon®: SLE4418, SLE4428, SLE5518 and SLE5528
- Cards with intelligent 256-byte EEPROM with write-protect function, including:
  - Infineon®: SLE4432, SLE4442, SLE5532 and SLE5542

4.0. Typical Applications

- e-Government
- Banking and Payment
- e-Healthcare
- Public Key Infrastructure
- Network Security
- Access Control
- e-Purse and Loyalty

5.0. Technical Specifications
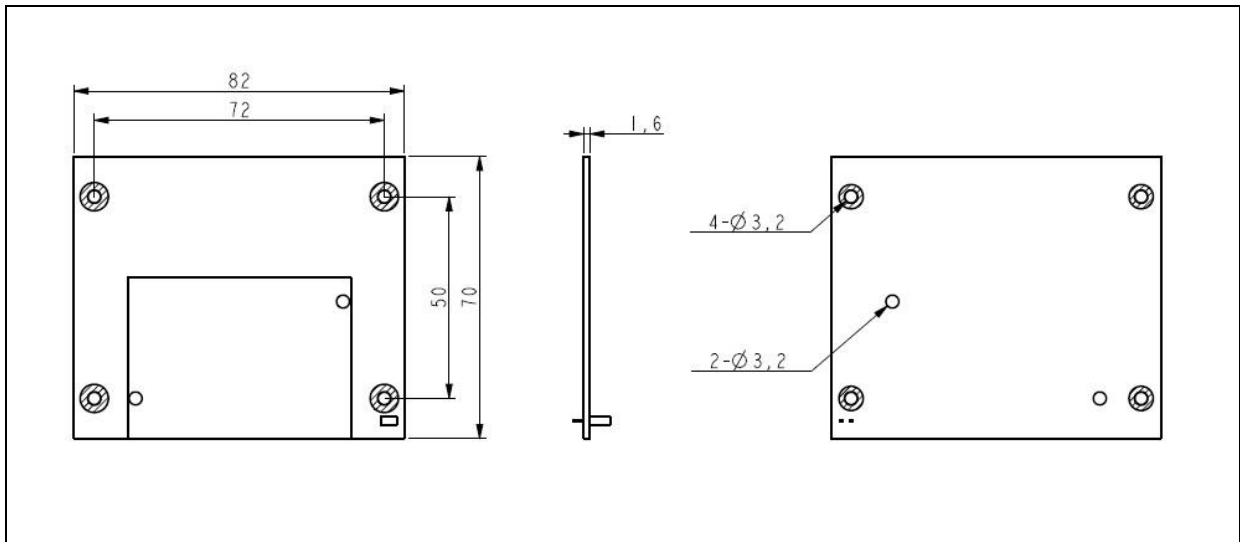
Physical Specifications	
Dimensions	70 mm (L) × 82 mm (W) × 10 mm (H)
Weight	19.1 g

USB Host Interface	
Protocol	USB CCID
Connector Type	1x5 Pin Header Connector, 2x3 Pin Header Connector
Power Source	From USB port
Speed	USB Full Speed (12 Mbps)
Supply Voltage	5 V

Contact Smart Card Interface	
Number of Slots	1 Full-sized Card Slot
Standard	ISO 7816, Class A, B, C (5 V, 3 V, 1.8 V)
Protocol	T=0; T=1; Memory Card Support
Supply Current	Max. 50 mA
Smart Card Read/Write Speed	9.6 Kbps – 600 Kbps
Short Circuit Protection	(+5) V/GND on all pins
Clock Frequency	4.80 MHz
Card Connector	Landing
Card Insertion Cycles	Min. 200,000

Built-in Peripheral	
LED (optional)	2 single-color: Green and Red

Operating Conditions	
Temperature	0 °C – 60 °C
Humidity	Max. 90% (non-condensing)
MTBF	500,000 hrs

Application Programming Interface	
PC-linked mode	PC/SC
	CT-API (through wrapper on top of PC/SC)

Certifications/Compliance
EN60950/IEC 60950, ISO 7816, USB Full Speed, EMV™ Level 1 (Contact), PC/SC, CCID, CE, FCC, WEEE, RoHS, REACH, Microsoft® WHQL

Device Driver Operating System Support

Windows® 7, Windows® 8, Windows® 8.1, Windows® 10
Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2, Windows® Server 2016
Linux®, Mac OS®, Android™ 3.1 and later

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