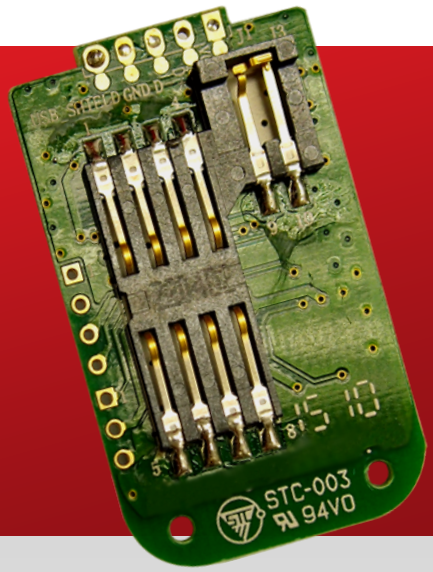
Advanced Card Systems Ltd.
Card & Reader Technologies

ACM38 Smart Card Reader



Technical Specifications V6.04

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Table of Contents

1.0. Introduction 3

1.1. Smart Card Reader 3
1.2. Ease of Integration 3

2.0. Features 4

3.0. Supported Card Types 5

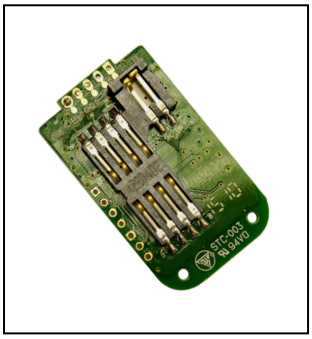
3.1. MCU Cards 5
3.2. Memory-based Smart Cards 5

4.0. Typical Applications 6

5.0. Technical Specifications 7

1.0. Introduction

ACM38 offers solutions for secured access control based on the PC-linked smart card reader. It comes in module form that enables easy implementation of smart card-based solutions in embedded system. ACM38 utilizes the latest microchip technology, bringing you high security for your confidential files in a convenient and easy way.



1.1. Smart Card Reader

ACM38 supports ISO 7816 Class A, B and C smart cards. In addition, it works with different memory cards and microprocessor cards with T=0 and T=1 protocol. It features a USB Full Speed interface and a smart cards R/W speed of 344 Kbps. This highly durable device can last for at least 100,000 card insertion cycles.

1.2. Ease of Integration

ACM38 is easy to install, use, and integrate in a different environment. It is PC/SC and CCID compliant, and its drivers are compatible with Windows, Linux, and Mac operating systems. In addition, ACM38 may now be used on mobile devices running the Android™ platform with versions 3.1 and above.

With its various features, ACM38 is a powerful component that is ideal for Security, e-Banking and e-Payment, and e-Government applications.

2.0. Features

- USB 2.0 Full Speed Interface
- Plug and Play – CCID support brings utmost mobility
- Smart Card Reader:
  - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) cards
  - Supports microprocessor cards with T=0 or T=1 protocols
  - 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™ OS 3.1 and above
- Compliant with the following standards:
  - EN60950/IEC 60950
  - ISO 7816
  - PC/SC
  - CCID
  - EMV 2000 Level 1
  - Microsoft WHQL
  - RoHS
  - REACH

3.0. Supported Card Types

3.1. MCU Cards

ACM38 operates with any MCU card following either the T=0 or T=1 protocol.

3.2. Memory-based Smart Cards

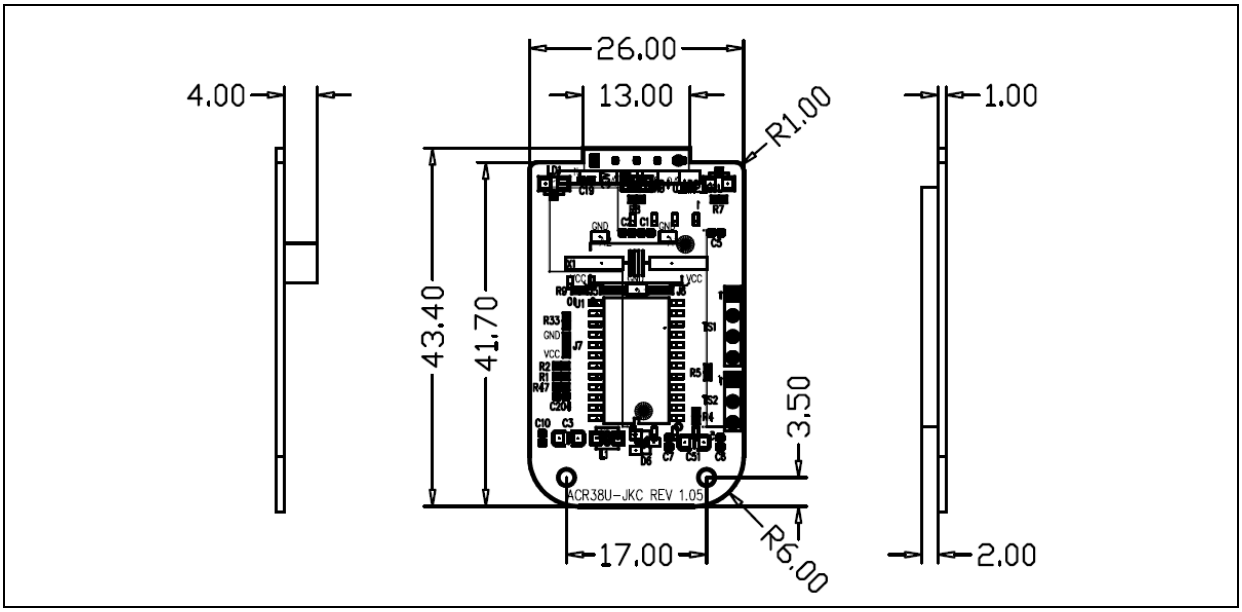
ACM38 works with several memory-based smart cards such as:

- Cards following the I2C bus protocol (free memory cards) with maximum 128 bytes 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 secure memory IC with password and authentication, including:
  - Atmel: AT88SC153 and AT88SC1608
- Cards with intelligent 1k bytes EEPROM with write-protect function, including:
  - Infineon: SLE4418, SLE4428, SLE5518 and SLE5528
- Cards with intelligent 256 bytes EEPROM with write-protect function, including:
  - Infineon: SLE4432, SLE4442, SLE5532 and SLE5542
- Cards with '104' type EEPROM non-reloadable token counter cards, including:
  - Infineon: SLE4406, SLE4436, SLE5536 and SLE6636
- Cards with Intelligent 416-Bit EEPROM with internal PIN check, including:
  - Infineon: SLE4404
- Cards with Security Logic with Application Zone(s), including:
  - Atmel: AT88SC101, AT88SC102 and AT88SC1003

4.0. Typical Applications

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

5.0. Technical Specifications



Universal Serial Bus Interface

Type ..... USB Full Speed, four lines: +5 V, GND, D+ and D-
Power Source ..... From USB
Speed ..... 12 Mbps

Smart Card Interface

Standard ..... ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V), T=0 and T=1
Supply Current ..... max. 50 mA
Smart Card Read/Write Speed ..... max. 344,086 bps
Short Circuit Protection ..... +5 V/GND on all pins
CLK Frequency ..... 4 MHz
Card Connector ..... Contact
Card Insertion Cycles ..... min. 100,000

Physical Specifications

Dimensions ..... 43.4 mm (L) x 26.0 mm (W) x 7.0 mm (H)

Operating Conditions

Temperature ..... 0 – 50 °C
Humidity ..... 10% - 90%
MTBF ..... 500,000 hrs.

Application Programming Interface

PC/SC
CT-API (through wrapper on top of PC/SC)

Certifications/Compliance

EN60950/IEC 60950, ISO 7816, PC/SC, CCID, EMV 2000 Level 1, RoHS, REACH, USB Full Speed
Microsoft® WHQL 2000, XP, Vista, 7, 8, Server 2003, Server 2008, Server 2008 R2, Server 2012

Device Driver Operating System Support

Windows® CE, 98, ME, 2000, XP, Vista, 7, 8, Server 2003, Server 2003 R2, Server 2008, Server 2008 R2, Server 2012
Linux, Mac, Android™ 3.1 and above