



**Advanced Card Systems Ltd.**  
Card & Reader Technologies

# ACR39F-A2 Smart Floppy Smart Card Reader



Technical Specifications V1.03



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## 1.0. Introduction

The ACR39F-A2 Smart Floppy is the ideal solution for easy integration of smart card readers into the desktop environment. Using the USB interface, it is powered by the computer's internal power supply, and can be configured according to customer preferences.

### 1.1. Smart Card Reader

The ACR39F-A2 Smart Floppy supports ISO 7816 Class A, B, and C smart cards. It also 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 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 ACR39F-A2 Smart Floppy is easy to install, use, and integrate in a computer-based environment. It is PC/SC and CCID compliant, and its drivers are compatible with Windows®, Linux® and Mac OS®. In addition, the ACR39F-A2 Smart Floppy can be used on mobile devices running Android™ versions 3.1 and later.

With its various features, the ACR39F-A2 Smart Floppy can be used in different applications, such as Banking and Payment, e-Government, e-Purse and Loyalty, and Access Control.



## 2.0. Features

- USB 2.0 Full Speed Interface (via detachable cable)
- 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<sup>1</sup>
- Compliant with the following standards:
  - EN 60950/IEC 60950
  - ISO 7816
  - EMV™ Level 1 (Contact)
  - PC/SC
  - CCID
  - CE
  - FCC
  - WEEE
  - RoHS
  - REACH
  - Microsoft® WHQL

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<sup>1</sup> PC/SC and CCID support are not applicable



## 3.0. Supported Card Types

### 3.1. MCU Cards

The ACR39F-A2 operates 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 ACR39F-A2 works with a wide variety of 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

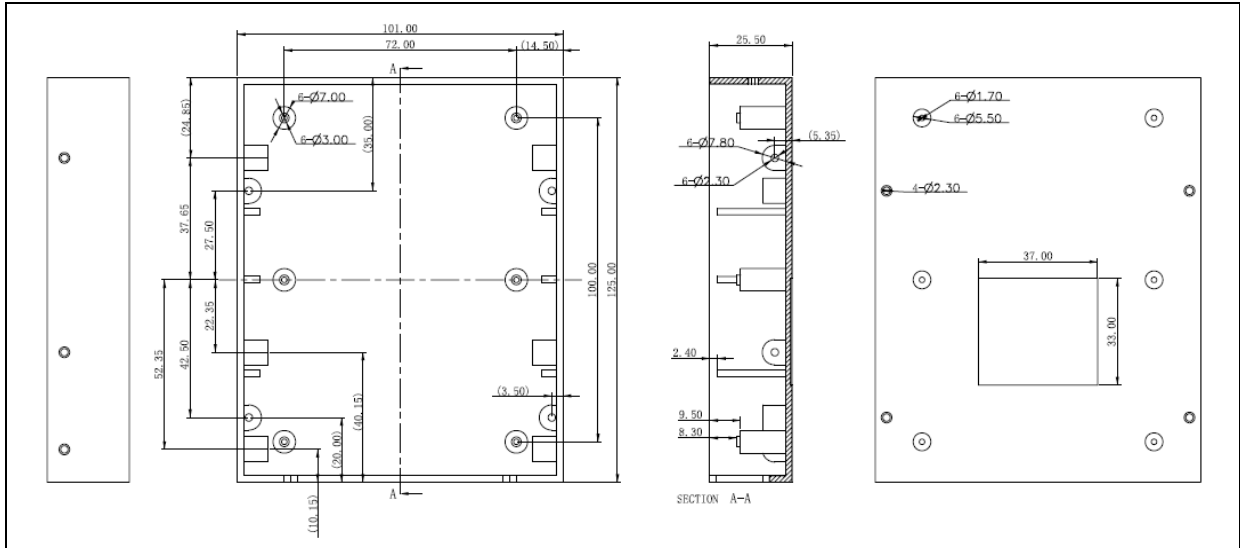


## 4.0. Typical Applications

- 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 ..... 125.0 mm (L) x 101.0 mm (W) x 25.5 mm (H)  
 Weight ..... 82.5g  
 Color ..... Black

### USB Host Interface

Protocol ..... USB CCID  
 Connector Type ..... 1x5 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 Parts 1-4, 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 ..... Sliding  
 Card Insertion Cycles ..... Min. 100,000

### Built-in Peripheral

LED ..... Green

### 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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