



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

# ACR100F



## Technical Specifications



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## 1.0. Introduction

More than just a smart card reader, the ACR100 SIMFlash also has a built-in 1-GB flash memory. Designed both to access plug-in (SIM-sized) smart cards and for data or application storage, it is ideal for GSM solutions such as GSM management software and VoIP applications, electronic payment systems, e-commerce, home banking, transportation, and computer and network access.



### 1.1. Serves as a Plug-In (SIM-Sized) Card Reader

The ACR100 SIMFlash is a reliable and cost-effective smart card reader for security-related applications. It is a USB full-speed plug-in card reader that, with the paired mass storage, enables you to do more than simply back up and manage your SIM card information on the PC. It supports most memory cards, MCU cards with T=0 and T=1 protocols, and GSM cards conforming to Spec 11.11.

### 1.2. Serves as a Mass Storage Device

Furthermore, the ACR100 SIMFlash is also a mass storage device. Being highly portable – with a dimension of 77 mm x 23 mm x 10 mm – makes it a perfect companion wherever you go. There is no need for additional cable and power supply as well since the device is bus-powered. Various options for partitioning the flash drive are also available – CD-ROM, boot disk and public, and lock and hidden areas can all be realized in the same device.

### 1.3. Plug and Play Feature

More than being Mass Storage Device Class compatible, its smart card reader component has CCID compliance, reducing driver installation issues. CCID defines the standard communication protocol between USB smart card readers and computers, leading to a simplified plug and play experience for customers.



## 2.0. Features

- USB combo device – works as smart card reader and mass storage
- USB 2.0 Hi-Speed interface for flash and USB 1.1 Full-Speed interface for smart card reader
- Bus-powered – no need for separate power supply or battery
- Plug and play – CCID support brings utmost mobility
- With protective USB cap and keychain loop
- Smart card reader:
  - Supports plug-in (SIM-sized) cards
  - Supports ISO 7816 Class A, B and C (5 V, 3 V, 1.8 V) cards
  - Read and write all microprocessor cards with T=0, T=1 protocols
  - Supports SLE 4418/28/32, SLE 5542 memory cards
  - Supports most common memory-based smart cards, including I2C bus protocol cards (from 1k bits up to 1024k bits) and secure memory cards (Atmel AT88SC153 and AT88SC1608)
  - Supports Spec 11.11-compliant GSM cards
  - Supports PPS (Protocol and Parameters Selection)
- Short circuit protection
- Flash drive:
  - Mass Storage Device Class compatible
  - Built-in 1 GB flash memory (Other memory sizes from 128 MB to 4 GB are available upon request)
  - Up to three partitions (private/security, public and CD-ROM/auto-run, and hidden)
  - Compliant with the following international standards: PC/SC, Microsoft WHQL, FCC, CE and RoHS

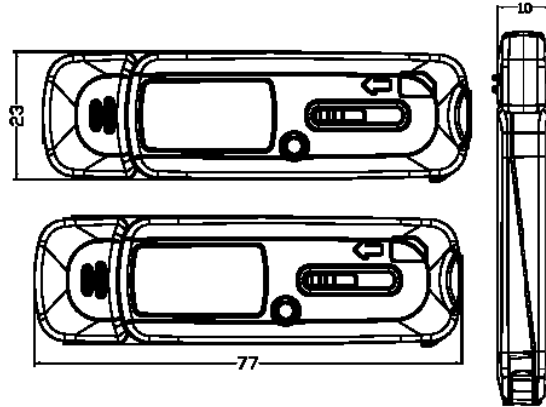


### **3.0. Typical Applications**

- GSM Management
- Data Storage
- Home Banking
- Electronic Commerce
- Digital Signature
- Identification
- Ticketing
- Parking and Toll Collection
- Online Gaming
- Computer/Network Access Control



## 4.0. Technical Specifications



### Power supply

Supply voltage ..... Regulated 5 V DC  
Supply current ..... < 310 mA (Without smart card)

### Universal Serial Bus Interface

Type ..... USB, four lines: +5V, GND, D+ and D-  
Connector ..... Supplied together with the reader  
USB protocol ..... USB 2.0 (Max. of 480 Mbps) for flash; USB 1.1 (Max. of 12 Mbps) for smart card reader

### 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 ..... 1,743 - 344,086 bps  
Short circuit protection ..... +5V / GND on all pins  
CLK frequency ..... 4 MHz  
Card connector ..... Sliding  
Card insertion cycles ..... Min. 10,000  
Communication Speed ..... Max. data rate of 12 Mbps

### Flash Memory Interface

Memory size ..... 1 GB (Other memory sizes from 128 MB to 4 GB are available upon request)  
Voltage supply ..... 2.7 V ~ 3.6 V  
Supply current ..... Max. 70 mA  
Endurance ..... 10K program/erase cycles  
Data retention ..... 10 Years  
Data Writing Speed ..... Up to 3 Mbps (Faster speed available upon request)  
Data Reading Speed ..... Up to 9 Mbps (Faster speed available upon request)  
Disk partitioning options ..... Up to 3 partitions (Public, private, CD-ROM/auto-run, and hidden)  
Bicolor LED shows the status of smart card and flash memory

### Physical Specifications

Dimensions ..... 77 mm (L) x 23 mm (W) x 10 mm (H)  
Color ..... Black  
Weight ..... 20 g

### Operating Conditions

Temperature ..... 0 - 50° C

### Certifications/Compliance

PC/SC, CCID, FCC, CE, RoHS Compliant, USB Full Speed,  
Microsoft® WHQL 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7

### Device Driver Operating System Support

Windows® 98, ME, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7  
Windows® CE 5.0  
Linux, MAC

