

A background image showing a person's hands interacting with a card reader device. The person is wearing a plaid shirt. The image is semi-transparent and serves as a backdrop for the central text.

TECHNICAL SPECIFICATIONS

ACR38K Keyboard with built-in Smart Card Reader





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1.0 Introduction



The ACR38K Multimedia Keyboard offers you with specialized keyboard setting, accessing every function in just one key-press, plus a classy multimedia controller. This package also comes with a card reader that enables you to easily implement smart card-based systems. The ACS smart card readers utilize the latest advancement of microchip technology, that brings you high security for your confidential files in a convenient and easy to carry microchip smart card. The software drivers and tools in

this package will enable you to write files to your smart card and to read the contents.

You can also write protect the contents of your smart card so that nobody can erase or overwrite the files.

Combined with our versatile smart card reader/writer, using the ACR38 module, the keyboard is transformed into a highly powerful component for security, e-commerce, and other applications.

1.1 About RoHS Compliance

The RoHS (Restriction of Hazardous Substance) Directive restricts the use of six hazardous materials in the manufacturing of various types of EEE (Electrical and Electronic Equipment), including:

- Lead,
- Mercury,
- Cadmium,
- Hexavalent chromium,
- Polybrominated biphenyl (PBB) and
- Polybrominated diphenyl ether (PBDE).



So RoHS compliance means the protection to the environment and your future generations from these restricted irritants, carcinogens and toxins.

2.0 Features

2.1 Keyboard Features

- USB interface with 18 multimedia hot keys support (back, forward, stop, refresh, search, favorites, home, mute, volume-, volume+, previous track, stop, play, next track, media, calculator, my computer)
- 4 programmable keys
- ACPI power management key support: power, sleep and wake up
- Fixed wrist rest

2.2 Smart Card Reader Features

- **USB full speed** interface to PC with simple command structure
- Read and write all microprocessor cards with T=0 or T=1 protocols
- Read and write popular memory card types
- Short Circuit Protection
- Support ISO-7816 Class A, B and C (**5V, 3V, 1.8V**) cards
- RoHS Compliant
- EN 60950/IEC 60950, EMV Level 1, ISO-7816 Class A, B and C (**5V, 3V, 1.8V**) cards, PC/SC, CE, FCC, Microsoft WHQL 2K, XP
- Support PPS (Protocol and Parameters Selection) with 1,743 – 250,000 bps in reading and writing smart cards



3.0 Supported Card Types

3.1 MCU Cards

The ACR38K can operate MCU card with T=0 and T=1 protocol. The table presented in Appendix A (Reference Manual) explains which card type selection value must be specified for the various card types supported by the reader.

3.2 Memory-based smart cards (synchronous interface)

- Cards following the I2C bus protocol (free memory cards) such as:
Atmel: AT24C01 / 02 / 04 / 08 / 16 / 32 / 64 / 128 / 256 / 512 / 1024
SGS-Thomson: ST14C02C, ST14C04C
Gemplus: GFM1K, GFM2K, GFM4K, GFM8K
- SLE4432/5542 intelligent 256 bytes EEPROM with write protect function:
SLE4432, SLE5542
- SLE4418/5528 intelligent 1K bytes EEPROM with write-protect function:
SLE4418, SLE5528
- Secure memory cards such as:
AT88SC153, AT88SC1608
- SLE4406/4436/5536 '104' type EEPROM non-reloadable token counter cards:
SLE4406, SLE4436, SLE5536

4.0 Typical Applications

- Home Banking and Home Shopping
- Electronic Commerce
- Checking the balance of account of re-loading an electronic purses
- Network access control
- S/W locking
- Digital signature
- Loyalty and promotions
- Stored value
- Identification
- Ticketing
- Parking and toll collection
- Online gaming



5.0 Technical Specification



Mechanical

Key number	108/109/113 (US/EU/JP)
Multimedia hot key.....	18 keys
Keyboard dim. (mm).....	475(L) x 254 (W) x 50(H)
Switch travel	4.0 ± 0.5mm
Switch reliability	10 million cycles
Keyboard interface	USB

Electrical

Voltage	5V DC
Current.....	150mA
Switch mechanism.....	Membrane
Contact resistance.....	500 Ω max.

Universal Serial Bus Interface

Type.....	USB full speed, four lines: +5V, GND, D+ and D-
Power source.....	From USB
Speed	12 Mbps

Smart Card Interface

Standard	ISO-7816 Class A, B and C (5V, 3V, 1.8V), T=0 and T=1
Supply current	max. 50mA
Smart card read / write speed	1,743 – 250,000 bps
Short circuit protection	+5V / GND on all pins
The presence of the smart card power supply voltage is indicated through a green LED "Power" on the keyboard	
CLK frequency.....	4 MHz
Card connector.....	Contact
Card insertion cycles.....	min. 100,000

Operating Conditions

Temperature	0 - 40° C
Humidity.....	10% - 90%

Standard/Certifications

EN 60950/IEC 60950, RoHS Compliant, EMV 2000 Level 1, ISO-7816, PC/SC, CE, FCC, USB Full Speed
Microsoft WHQL 2K, XP, Vista

OS

Windows 98, ME, 2K, XP, Vista, NT 4.0, 2K3 Server, Linux, Mac OS X

OEM

OEM-Logo possible, customer-specific colors, casing, and card connector

