



Sm@rtSIM® Phoenix 400

The flexible Java SIM

Hardware Features

Operating Characteristics

- Voltage: Class A, B & C (1.8V – 5.0V ±10%)
- Temperature Range: -25 to +85°C

CPU

- 32-bit CPU core

Memory

- 400kB Flash
- 12kB RAM
- Min. 500,000 erase/write cycles for page at room temperature
- Data retention of 10 years at room temperature

Serial I/O

- Hardware UART (conforms to ISO7816)

Others

- 8-bit random number generator (RNG)
- Parity error management
- CRC-16 calculator
- 32-bit timer / counter
- Form factors: ID-1, 2FF (Standard SIM), 3FF (Micro-SIM), 4FF (Nano-SIM), Triple SIM

Software Features

Key Features

- Release 8 LTE
- 2G / 3G / LTE / CDMA
- Milenage, TUAK, COMP128-1/2/3/4, CAVE
- DPA-/SPA-secure
- DES, AES, SHA 1/256-Hashing, MD5
- Java Card: 2.2.2
- Java API
 - UICC and USAT API (Rel6)
 - Smart de-fragmentation
 - Support of Integer for Java
- GP / OTA: 2.2
- OTA Support
 - OTA via SMS / HTTPs / BIP
 - CAT-TP
 - Remote File Management (RFM)
 - Remote Applet Management (RAM)
- Browsers: WIB 1.3 / WIB 2.0 / S@T v4
- R-UIM / CSIM
- ISIM Rel8 / GBA
- EAP AKA / EAP SIM
- Enhanced Administrative Commands
- Enhanced memory management for 3rd party applications
- Intelligent memory management system to enhance erase / write cycles

Key Standard Compliance

ETSI

- 101 220 ETSI numbering system for telecommunication application providers
- 102 127 Transport protocol for CAT applications Stage 2
- 102 221 UICC-Terminal interface; Physical and logical characteristics
- 102 222 Administrative commands for telecommunication applications
- 102 223 Card Application Toolkit (CAT)
- 102 225 Secured packet structure for UICC based applications
- 102 226 Remote APDU structure for UICC based applications
- 102 241 UICC Application Programming Interface (API) for Java Card
- 102 268 Test specification for UICC Application Programming Interface (API) for Java Card

3GPP

- 43.019 Subscriber Identity Module Application Programming Interface (SIM API) for Java Card Stage 2
- 51.011 Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface
- 51.013 Test specification for Subscriber Identity Module (SIM) Application Programming Interface (API) for Java Card
- 51.014 Specification of the SIM Application Toolkit for the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface
- 51.017 Subscriber Identity Module (SIM) conformance test specification
- 31.048 Security mechanisms for the (U)SIM application toolkit; Test specification
- 31.101 UICC-Terminal Interface; Physical and Logical Characteristics
- 31.102 Characteristics of the USIM Application
- 31.103 Characteristics of the IP Multimedia Services Identity Module (ISIM) application
- 31.111 USIM Application Toolkit (USAT)
- 31.115 Secured packet structure for (U)SIM Toolkit applications
- 31.116 Remote APDU Structure for (U)SIM Toolkit applications
- 31.122 USIM conformance test specification
- 31.130 (U)SIM API for Java Card
- 31.213 Test Specification: Application Programming Interface (API) for Java Card
- 31.900 SIM/USIM Internal and External Interworking Aspects
- 31.919 2G/3G Java Card
- API based applet internetworking

3GPP2

- C.50016-C Over-the-Air Service Provisioning of Mobile Stations in Spread Spectrum Standards, Rev.C V2.0
- C.50023-C Removable User Identity Module for Spread Spectrum Systems, Rev.C V2.0
- C.50035 CDMA Card Application Toolkit (CCAT), Rev.A V1.0
- C.50065-A cdma2000 Application on UICC for Spread Spectrum Systems, Rev.A V1.0

Sun/Oracle Specifications

- JCRE 2.1.1 Java Card 2.1.1 Runtime Environment (JCRE) Specification, Rev. 1.0
- JCRE 2.2.2 Runtime Environment Specification, Java Card Platform, V2.2.2
- JCVM 2.2.2 Virtual Machine Specification, Java Card Platform, V2.2.2
- JCAPI 2.2.2 Application Programming Interface, Java Card Platform, V2.2.2

GlobalPlatform Specifications

- GlobalPlatform Card Specification, V2.1.1
- GP 2.2 AmdB Remote Application Management over HTTP, Card Specification V2.2 - Amendment B, V1.1

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July/2017