Ruggedized (2FF) Verizon IoT SIM

Hardware Features

Operating Characteristics
- Voltage:
  Class A, B, C (1.8 V – 5.0 V ±10%)
- Temperature Range:
  -40 to +85 °C (Voltage Class: A, B, C)
  -40 to +105 °C (Voltage Class: B, C)

CPU
- 16-bit CPU core

Memory
- 320 or 504 kB Flash
- 8 or 12 kB RAM
- Min. 500,000 erase/write cycles per page
- Up to 16.5 M erase/write cycles for one hot spot per sector (at 85 °C)
- 10 years data retention

Serial I/O
- Hardware UART (conforms to ISO7816)

Cryptography
- Symmetrical Cryptography DES/TDES, AES

M2M
- Form factors: ID-1, 2FF (Standard SIM), 3FF (Micro SIM)
- Industrial qualification plan

Software Features

Key Features
- Release 8 LTE
- 2G / 3G / LTE / CDMA
- Milenage, CAVE, COMP128-1/2/3/4
- DPA-/SPA-resistant
- DES, AES, MD5, SHA 1/256-Hashing
- Java Card™: 2.2.2
- Java™ API:
  - UICC and USAT API (Rel6)
  - Smart de-fragmentation
  - Support of Integer
  - GP / OTA: 2.2
  - OTA Support:
    - OTA via SMS / HTTPs / BIP CAT-TP
    - Remote File Management
    - Remote Applet Management
    - 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

M2M enhancement
- GSMA eSIM Management
- QoS SIM Application
- M2M device detection & lock
- M2M SIM life time extension and monitoring
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 telecommunications 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
- 31.01 UICC-Terminal Interface; Physical and Logical Characteristics
- 31.02 Characteristic of the USIM Application
- 31.03 Characteristics of the IP Multimedia Services Identity Module (ISIM) application
- 31.11 USIM Application Toolkit (USAT)
- 31.15 Secured packet structure for (U)SIM Toolkit applications
- 31.16 Remote APDU Structure for (U)SIM Toolkit applications
- 31.22 USIM conformance test specification
- 31.30 (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.S0016-C Over-the-Air Service Provisioning of Mobile Stations in Spread Spectrum Standards, Rev.C V2.0
- C.S0023-C Removable User Identity Module for Spread Spectrum Systems, Rev.C V2.0
- C.S0035 CDMA Card Application Toolkit (CCAT), Rev.A V1.0
- C.S0065-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

Global Platform Specifications
- GlobalPlatform Card Specification, V2.11
- GP 2.2 AmdB Remote Application Management over HTTP, Card Specification V2.2
- Amendment B, V1.1

All SIM specifications provided Giesecke+Devrient