

Turnkey Smart Card Reader ICs with Generic Serial Host interface, opt. PINpad, I/Os and power management



Description

The Teridian 73S1209F and 73S1210F are self-contained, SoC smart card reader ICs that are an ideal solution for serially connected ISO-7816 design. Any serial port connected or stand alone smart card reader can benefit from the unique feature set the Teridian 73S1209F and 73S1210F have to offer. With the 73S1209F and 73S1210F, products like personal PINPads, transparent smart card readers or stand alone smart card readers in embedded systems are easily and economically implemented.

Teridian is committed to simplifying customer designs as well as shortening development and certification timescales by providing unparalleled support and design help. Customers may elect to use Teridian's free-of-charge turnkey reference designs and software solutions that fully comply with all relevant standard (ISO7816(T=0,T=1), PS/SC, CCID) and are suitable to pass key certification tests (EMV 4.1(level 1), Microsoft WHQL). Alternately, Teridian fully supports customer's development of their own solutions through Teridian's extensive documentation and support.

KEY FEATURES:

Turnkey Solution:

- > Available with Pseudo CCID software stack:
 - Suitable for ISO-7816 and EMV smart cards
 - Single or multi card slots
 - Drivers for Windows™ XP, CE, Mobile, Linux and more

Higher performance CPU core:

- > 80515 CPU Core
 - 1 Clock-cycle/instruction
 - Up to 24MIPS available

Large on-chip memory and powerful In-Circuit-Emulation:

- > On-chip 2KB XRAM, 256IRAM, and dedicated FIFO to ISO7816
- > True on-chip 32KB Flash (program memory, segmented with 512B pages)
- > 3-wire JTAG-like interface for In-Circuit-Emulation and Flash Programming
 - On-chip security fuses can permanently disable the JTAG-like interface and lock the Flash for final products

Single and Multi card slots

- > 1 built-in electrical interface
 - Suitable for all ISO-7816 and derivative standards (including EMV 4.1, GSM11-11, etc)
- > Possibility to extend the number of smart card slots through external 73S8010R/C ICs

BENEFITS:

- > Immediate compliance with ISO7816-3 & 4 and EMV 4.1 level 1
- > No software development needed for Windows and Linux based PCs
- > Also suitable for Linux embedded
- > Firmware code available to developers who may want to add their own application on top of Teridian CCID

- > Compares to 6 or 12 clock-cycles per instruction for its competitors in the same price range (with 4MIPS max)
- > Suitable for encryption needs

- > Compares to 768B max RAM for its competitors in the same price range
- > Compares to 16KB ~ 32KB max for its competitors in the same price range
- > Flexible firmware upgradability
- > Allows In-System and In-Application Programming
- > Easy-to-use and cost effective development plus programming tools
- > Custom firmware is protected

- > The lowest BOM for single-slot smart card reader
- > The smallest PCB footprint
- > Scalability: External SIM/card interfaces (73S8010x) can be added without modifying the firmware/hardware



Applications

- > **SIM Readers in wireless devices (WiMAX, GSM, GPRS etc)**
- > **Point-of-Sale Terminals**
- > **Payphones**
- > **Vending and ticketing machines**
- > **Audio/Video**
 - Conditional Access and payment slots in digital STB, PVR and Integrated DTVs
- > **General purpose smart card and SIM readers**

Additional Features

Various power supply options:

- > 73S1209F: Dual voltage needed:
 - +3.3V (2.7V~3.6V)
 - +5.0V (4.75V~6.0V)
- > 73S1210F: Single voltage needed (requires an external 10µH inductor):
 - +5.0V (4.4V~5.5V when using VBUS)
 - or +4.0V to 6.5V (when using VBAT ON/OFF line required for power management)
 - or +2.7V ~ 6.5V (when using VPC ON/OFF line required for power management)

SIM and Smart-Card Support:

- > Supports T=0, T=1, ISO-7816 asynchronous smart cards
- > Card baud rate up to 230Kbps
- > Supports all card voltages: 1.8V, 3V and 5V
- > ESD Rating: 7KV

Additional Features:

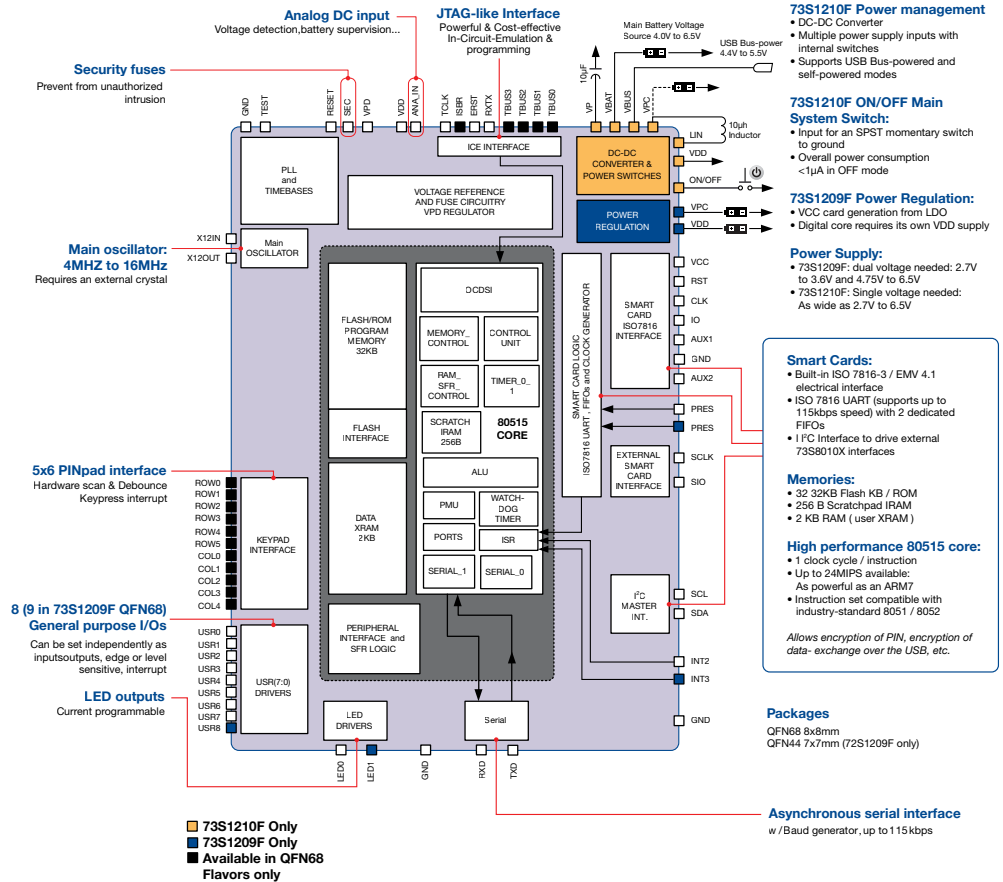
- > Asynchronous serial interface: 115Kbps
- > 5x6 PINpad interface
- > 8 /user I/Os
- > 1 LED, current programmable outputs (73S1215F/73S1217F)
- > 1 Analog DC input:
 - Allows voltage detection, battery supervision
- > I²C host interface (400Kbps) with 2-Byte FIFO
 - Suitable to drive external smart card interfaces, or small peripherals such as LCD displays, etc.

Other Developments Tools:

- > Powerful In-Circuit-Emulation and Flash programming through a 3-wire JTAG-like interface
 - Low-cost development tools
- > A complete set of ISO-7816, EMV4.1 and sample code for CCID smart card reader (in ANSI C)

Package:

- > 44pin QFN and 68pin QFN



Ordering Information

PART DESCRIPTION	ORDERING NUMBER
73S1209F 44-QFN, Lead Free	73S1209F-44IM/F
73S1209F 44-QFN, Lead Free, Tape and Reel	73S1209F-44IMR/F
73S1209F 68-QFN, Lead Free	73S1209F-68IM/F
73S1209F 68-QFN, Lead Free, Tape and Reel	73S1209F-68IMR/F
73S1210F 44-QFN, Lead Free	73S1210F-44IM/F
73S1210F 44-QFN, Lead Free, Tape and Reel	73S1210F-44IMR/F
73S1210F 68-QFN, Lead Free	73S1210F-68IM/F
73S1210F 68-QFN, Lead Free, Tape and Reel	73S1210F-68IMR/F