

SDIO Linux Stack

Features

- OS and processor independent embedded SD/SDIO Stack and Bus Driver
- Compliant with SD Host Specification v1.0 and v2.0 (presently being draft), SD Physical Specification v1.10, SDIO Card Specifications v1.2, and MMC Specification v3.31/4.1.
- Supports 1-bit SD, 4-bit SD and SPI modes
- Supports multiple host controllers
- Supports multiple slots per host
- developed in ANSI C
- SD host controller driver supports Intel XScale PXA270 and Samsung's S3C2410
- SDIO client driver supports SDIO-WiFi, SDIO-Bluetooth, and SD-UART
- Supported OSs include Linux 2.4.x/ 2.6.x, and uITRON 3.1

Overview

The Arasan SDIO Linux Stack is developed based on an OS and processor independent architecture. The features offer by the SDIO Linux Stack allow designers to integrated SD/SDIO applications in their products with great flexibility.

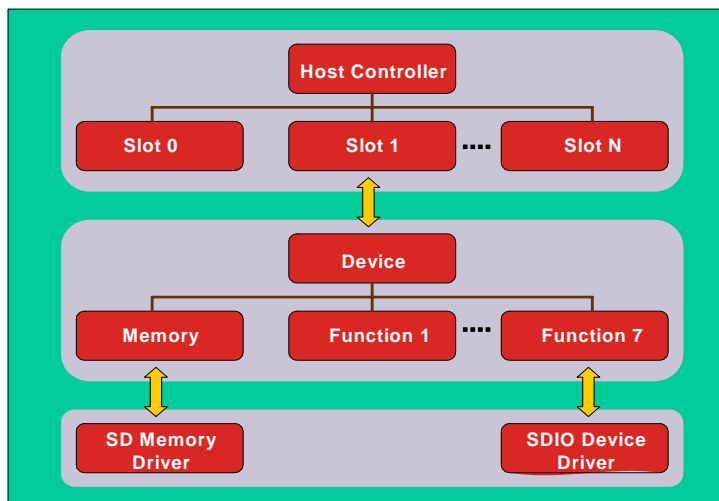
The SDIO Linux Stack supports devices conformed to SD Host Specification version 1.0, SD Host Specification version 2.0 (presently being drafted), SDIO device controller version 1.2, and MMC Specification version 3.31/4.1. Embedded operating systems support includes Linux 2.4, Linux 2.6, and uITRON 3.1. Processor support includes the Intel XScale PXA270, and Samsung S3C24210.

The Arasan Linux stack has an OS independent architecture that wraps around a thin OS layer. The stack includes functions such as initialization, enumeration, bus width settings, and client driver matching. A set of well defined APIs is available that consists of commonly used functions such as enable/disable of interface, sending and receiving of commands, power management, file system support, and SDIO interrupt handling. The bundle comes with a easy to use DDK for client driver development

The Arasan SDIO Linux Stack supports the Arasan SD Host IP Core version 1.0/ 2.0, SDIO Device IP Core version 1.2, and MMC IP Core version 3.31/4.1. Licensees include CSR, Telecom Italia, Philips, and others.



Arasan SDIO Linux Stack Architecture



SDIO Linux Stack

Host Controller Driver:

The host controller driver informs the bus driver about its availability through the driver registration API.

The bus driver accesses the host controller driver through the entry points provided by the host controller driver during the driver registration.

Client Driver:

The client driver informs its availability by registering itself with the bus driver. Registration process is the core function which informs the bus driver with the core information about the client driver. The registration process involves searching of the device match of the client driver.

Bus Driver:

The bus driver is the core of the SDIO stack that co-ordinates between the host controller drivers and client drivers. The bus driver works with the host controller and client drivers in such a way that they are independent of each other. The entire bus driver is built as single driver module and is initialized when loaded.

Benefits:

- Conforms to SD/SDIO/MMC standards
- Premier direct support from Arasan engineering team
- Flexibility in choice of OSs and processors
- Industrial standard test-bench development platforms available from Arasan
- Customer training available

Development Platform:

- Host development platform (optional)

Arasan SDIO Linux Stack Block Diagram

