

SDIO Now! Solutions

SDIO Now! V2.x Highlights

- Delivers up to 3x greater SDIO system throughput and performance from previous versions
- Supports High Capacity MMC/SD memory cards
- Supports MMC*plus*™ and MMC*mobile*™ cards
- Provides SD Password Feature for personal data and content protection on SD cards
- Includes sample reference driver for Intel® XScale™ PXA27x (Bulverde), TI OMAP 850 and Standard Host Controller

SD/SDIO and MMC driver architecture and tool chain

Smart device makers, host controller chipset vendors, and peripheral card manufacturers face a common dilemma – how to implement robust SD/SDIO and MMC functionality, while at the same time reduce software development costs and speed time to market. The answer is to use SDIO Now!, a complete system software solution for PDAs, smartphones, digital cameras, and other embedded devices.

Get Your Device to Market Faster with SDIO Now!

SDIO Now! Architecture is a widely accepted industry standard used in millions of devices already in the market. This proven technology has been adopted by peripheral card manufacturers, chipset vendors, OEMs, and ODMs. Using SDIO Now! eliminates the need to create an MMC/SD/SDIO software stack and ensures compatibility across multiple host controllers.

Differentiating Your Device with SDIO Now!

Product differentiation is critical to achieving success in highly competitive markets. SDIO Now! V2.x can help you differentiate your product by leveraging additional features which are unavailable in a standard out-of-the-box OS with MMC/SD/SDIO functionality.

Fast Path technology, for example, decreases latency and boosts system throughput by 200%. Soft Block provides seamless and efficient mechanism for Multi-Block transfer even when a Host Controller or a Card does not support that function. SDIO Now! V2.x also extends product life by supporting the latest features like enhanced power management and additional class functions.

Future releases of SDIO Now! V2.x will include support for 8 Bit *MMCplus*™ and *MMCmobile*™ cards, 4GB SD memory cards, and dual slots with built-in host controllers (PXA27x and OMAP).

Reduce Development Risk with Proven Technology

The smart device development path is challenging in terms of time to market and cost of development. Now you can virtually eliminate all risks related to MMC/SD/SDIO software functionality.

SDIO Now! technology is fully tested by BSQUARE, has shipped in millions of devices and peripherals, and has been proven in the field with customers for more than three years. Licensees of SDIO Now! include some of the world's largest electronics manufacturers, names like Hitachi, HP, LG Electronics, Matsushita, Motorola, NEC, Philips, Samsung, Seiko, Toshiba, and others.

| SDIO Now! Feature Chart | | | | |
|--|---------|-----|-----|-----|
| Features | Version | | | |
| | 2.0 | 2.1 | 2.2 | 2.3 |
| HIGH PERFORMANCE—FASTER DATA TRANSFER | | | | |
| Soft Block: Provides Multi-Block Support, Increases Throughput by 20–25% | ■ | ■ | ■ | ■ |
| Fast Path: Increase Throughput by 2X | ■ | ■ | ■ | ■ |
| MMC CARD SUPPORT | | | | |
| 1 Bit Support | ■ | ■ | ■ | ■ |
| 4 Bit Support—Up to 3X Performance Gain from 1 Bit | | ■ | ■ | ■ |
| 8 Bit Support—More Performance Gain from 4 Bit | | | ■ | ■ |
| MORE MEMORY SUPPORT | | | | |
| 2GB SD or MMC Card | ■ | ■ | ■ | ■ |
| 4GB SD Card (SD 1.1 Specification) | | | | ■ |
| SD PASSWORD PROTECTION | | | | |
| Lock/Unlock SD Card Through SD Password—Protect Personal Data on SD Card | | ■ | ■ | ■ |
| DUAL CARD SUPPORT | | | | |
| Support Two Slots with Built-in Host Controllers PXA27x and OMAP 850 | | | ■ | ■ |

■ = BSQUARE Exclusive

Toolkits Help Speed Development of Device Drivers

SDIO Now! Driver Development Kits (DDKs) provide everything needed to develop MMC/SD/SDIO host controller or peripheral drivers. These powerful tools reduce development costs, while accelerating time to market.

- **SD Host Driver Development Kit** provides an entire system software framework for OEMs and ODMs building devices or semiconductor vendors developing host controller drivers for their architectural platform. The SD Host DDK also simplifies adaptation by including sample reference host controller drivers. Documentation covers host controller driver development, system integration, and bus driver tuning.
- **SD Peripheral Driver Development Kit** is designed for peripheral OEMs and tailored to their software development requirements. It provides a standardized set of platform independent peripheral APIs, necessary documentation and technical support essential for peripheral manufacturers to concentrate on their device functionality instead of each host controller and/or platform implementation. The kit also includes documentation on developing and debugging peripheral drivers, binary versions of the bus and class drivers, and sample drivers in source code form.

SD Device Interface

The SD Device Interface provides an API for an SD client driver to communicate with the SD or SDIO Card under its control. The bus driver implements this interface, multiplexing and demultiplexing bus requests to and from the client driver. The interface provides callback mechanisms to device drivers for events such as request completion, device removal and power management.

Host Controller Interface

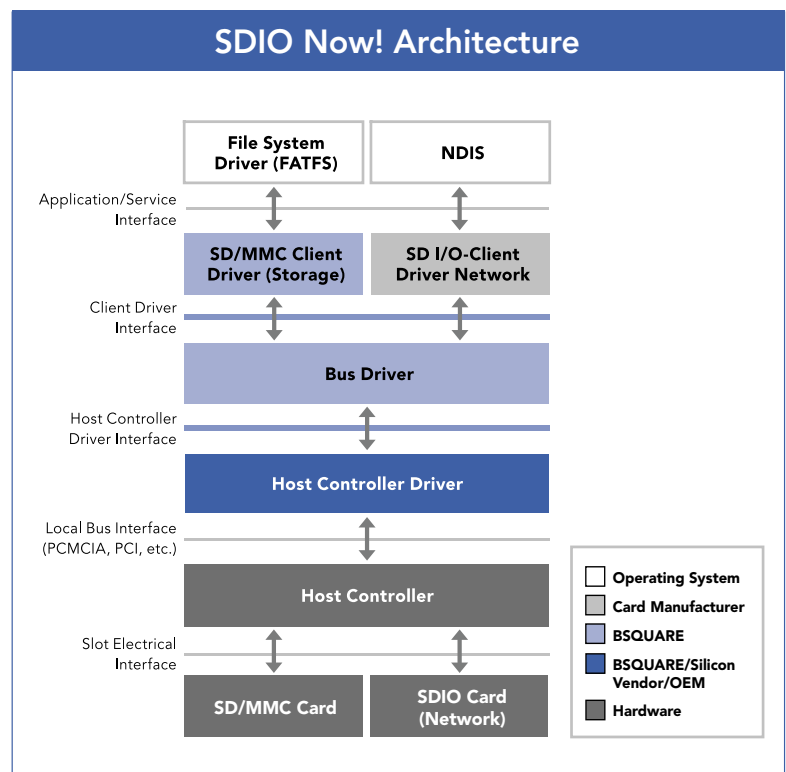
The Host Controller Interface provides the host controller hardware abstraction for the bus driver, keeping the client driver code independent of the host controller driver code. The bus driver supports multiple host controllers and controllers with up to 256 physical slots.

SDIO

Secure Digital Input/Output (SDIO) is an interface that extends the functionality of devices with SD card slots. A variety of SDIO cards are being developed, such as Bluetooth, GPS, and Wireless LAN.

MMC

MultiMediaCards (MMC) are small removable, solid-state recording media, designed especially for cellular phones, digital cameras and personal digital assistants (PDAs), among many other applications. MMC*plus*[™] and MMC*mobile*[™] Cards, built to the latest MMC standards, offer wider bandwidths and the highest data transfer rates among memory cards available in the market today.



SDIO Technology from BSQUARE

Your customers demand advanced SDIO functionality in their device. Now you can include support for the latest features and function of SD/SDIO and MMC Card technology with SDIO Now! SDIO Now! V2.x is the most advanced, highest performance SDIO technology available today. Make sure you have the competitive edge with SDIO Now! system software from BSQUARE.

BSQUARE is the Trusted Choice

- Unparalleled expertise in Windows Embedded and Windows Mobile technology
- Innovative software products to help speed device development
- Professional Engineering Services to reduce risk and speed time-to-market
- Windows Embedded software tools and runtime licensing
- Training and Support to help your team build smart devices faster and cost-effectively
- Trusted intermediary between OEMs, Silicon Vendors and Microsoft

Take the Next Step – Contact BSQUARE

Is your current device development project stalled, behind schedule, or over budget? Maybe you are just starting to think about planning, building, licensing, or shipping a Windows-based embedded or mobile device. No matter where you are in the device development cycle, you need to talk to BSQUARE. To find out how we can help, please visit www.BSQUARE.com or call (888) 820-4500.

Supported Processors

- ARM Based Architectures
- Intel® XScale™
- TI OMAP
- Standard Host Controller Based Processors
- MIPS Based Architectures

Standards Conformance:

- SD Card Association Specifications
- MultiMediaCard Association Specifications

About BSQUARE

BSQUARE is a provider of solutions for the global embedded device community. Committed to delivering quality and lowering project risk, our teams collaborate with smart device makers to bring their products to market faster. Our solution portfolio includes software and hardware development, systems integration services, reference designs, board support packages, middleware, and applications. As a full service provider, device makers can also license best-in-class software products and operating systems. Since 1994, BSQUARE has completed hundreds of successful projects and has become a trusted partner to smart device makers worldwide.

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