



Ultra Fast USB 2.0 Hub and **Multi-Format Flash Media Controller with Dual SD** Interfaces

PRODUCT FEATURES

Data Brief

General Description

The SMSC USB2660/USB2660i is a USB 2.0 compliant, Hi-Speed hub, card reader, and protocol converter combo solution. This fully integrated single chip solution provides USB expansion, flash card media reader/writer integration, and SDIO bridging. The SMSC USB2660/USB2660i provides an ultra fast interface between a USB host and today's popular flash media formats. The controller allows read/write capability to flash media from the following families:

- Secure Digital[™] (SD)
- MultiMediaCard[™] (MMC)
- Memory Stick[®] (MS)
 xD Picture Card[™] (xD)¹

The USB2660/USB2660i offers a versatile, costeffective, and energy-efficient hub controller with 2 downstream USB 2.0 ports. This combo solution leverages SMSC's innovative technology that delivers industry-leading data throughput in mixed-speed USB environments. Average sustained transfer rates exceeding 35 MB/s are possible².

Highlights

- 2 exposed Hi-Speed USB 2.0 downstream ports for external peripheral expansion
- The dedicated flash media reader is internally attached to a 3rd downstream port of the hub as a USB Compound Device
 - a single or multiplexed flash media reader interface
 - a non-multiplexed SD/SDIO interface (slot) for SD card reader or SDIO bridging applications
- PortMap
 - Flexible port mapping and port disable sequencing supports multiple platform designs
- PortSwap
 - Programmable USB differential-pair pin locations eases PCB design by aligning USB signal traces directly to connectors
- PHYBoost
 - Programmable USB transceiver drive strength recovers signal integrity

1.For xD-Picture Card[™] support, please obtain a user license from the xD-Picture Card License Office. 2.Host and media dependent.

Features

- Compliance with the following flash media card specifications SD 2.0 / MMC 4.2 / MS 1.43 / MS-Pro 1.02 / MS-Pro-HG 1.01 / MS-Duo 1.10 / xD 1.2
- Supports a single external 3.3 V supply source; • internal regulators provide 1.8 V internal core voltage for additional bill of materials and power savings
- The transaction translator (TT) in the hub supports operation of Full-Speed and Low-Speed peripherals
- 9 K RAM | 64 K on-chip ROM
- Enhanced EMI rejection and ESD protection performance
- Hub and flash media reader/writer configuration from a single source: External I²C[®] ROM or external SPI ROM
 - Configures internal code using an external I²C EEPROM
 - Supports external code using an SPI Flash EEPROM
 - Customizable vendor ID, product ID, and language ID if using an external EEPROM
- Additional SD/SDIO port for card reader or to host wireless applications such as WiFi[™], Bluetooth[®], and GPS
- Up to 20 configurable GPIOs for special functions
- The USB2660 supports the commercial temperature range of 0°C to +70°C
- The USB2660i supports the industrial temperature range of -40°C to +85°C
- 64-pin QFN lead-free, RoHS compliant package (9x9 mm)

Applications

- Desktop and mobile PCs
- Printers
- GPS navigation systems
- Media players/viewers
- Consumer A/V •
- Set-top boxes
- Industrial products



ORDER NUMBERS:

USB2660/USB2660i-JZX for 64-PIN, QFN LEAD-FREE RoHS COMPLIANT PACKAGE

This product meets the halogen maximum concentration values per IEC61249-2-21 For RoHS compliance and environmental information, please visit www.smsc.com/rohs



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SMSC makes the following part-numbered device available for purchase only by customers who are xD-Picture Card licensees: USB2660/USB2660i.

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Block Diagram



Figure 1 USB2660/USB2660i Block Diagram



Package Outline





SIDE VIEW

3-D VIEWS



COMMON DIMENSIONS SYMBOL MIN ΝΟΜ МАХ NOTE REMARK 0.80 0.85 1.00 OVERALL PACKAGE HEIGHT Α A1 0 0.02 0.05 STANDOFF 0.65 0.80 MOLD CAP THICKNESS A2 D/E 8.90 9.00 9.10 X/Y BODY SIZE 8.65 X/Y MOLD CAP SIZE D1/E1 8.75 8.85 D2/E2 4.60 4.70 4.80 2 X/Y EXPOSED PAD SIZE 0.30 0.40 0.50 4 TERMINAL LENGTH L b 0.18 0.25 0.30 2 TERMINAL WIDTH 0.50 BSC TERMINAL PITCH е

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NOTES: 1. ALL DIMENSIONS ARE IN MILLIMETER. 2. DIMENSIONS "b" APPLIES TO PLATED TERMINALS AND IT IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM THE TERMINAL TIP. 3. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE AREA INDICATED. THE TERMINAL #1 IDENTIFIER MAY BE EITHER A MOLD OR MARKED FEATURE.

Figure 2 USB2660/USB2660i 64-Pin QFN