



# 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<sup>™</sup> (SD)
- MultiMediaCard<sup>™</sup> (MMC)
- Memory Stick<sup>®</sup> (MS)
- xD Picture Card<sup>™</sup> (xD)<sup>1</sup>

The USB2660/USB2660i offers a versatile, cost-effective, 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 possible<sup>2</sup>.

### 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

### 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 I<sup>2</sup>C<sup>®</sup> ROM or external SPI ROM
  - Configures internal code using an external I<sup>2</sup>C 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<sup>™</sup>, Bluetooth<sup>®</sup>, 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

1. For xD-Picture Card<sup>™</sup> support, please obtain a user license from the xD-Picture Card License Office.

2. Host and media dependent.

**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](http://www.smSC.com/rohs)



80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000, FAX (631) 273-3123

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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

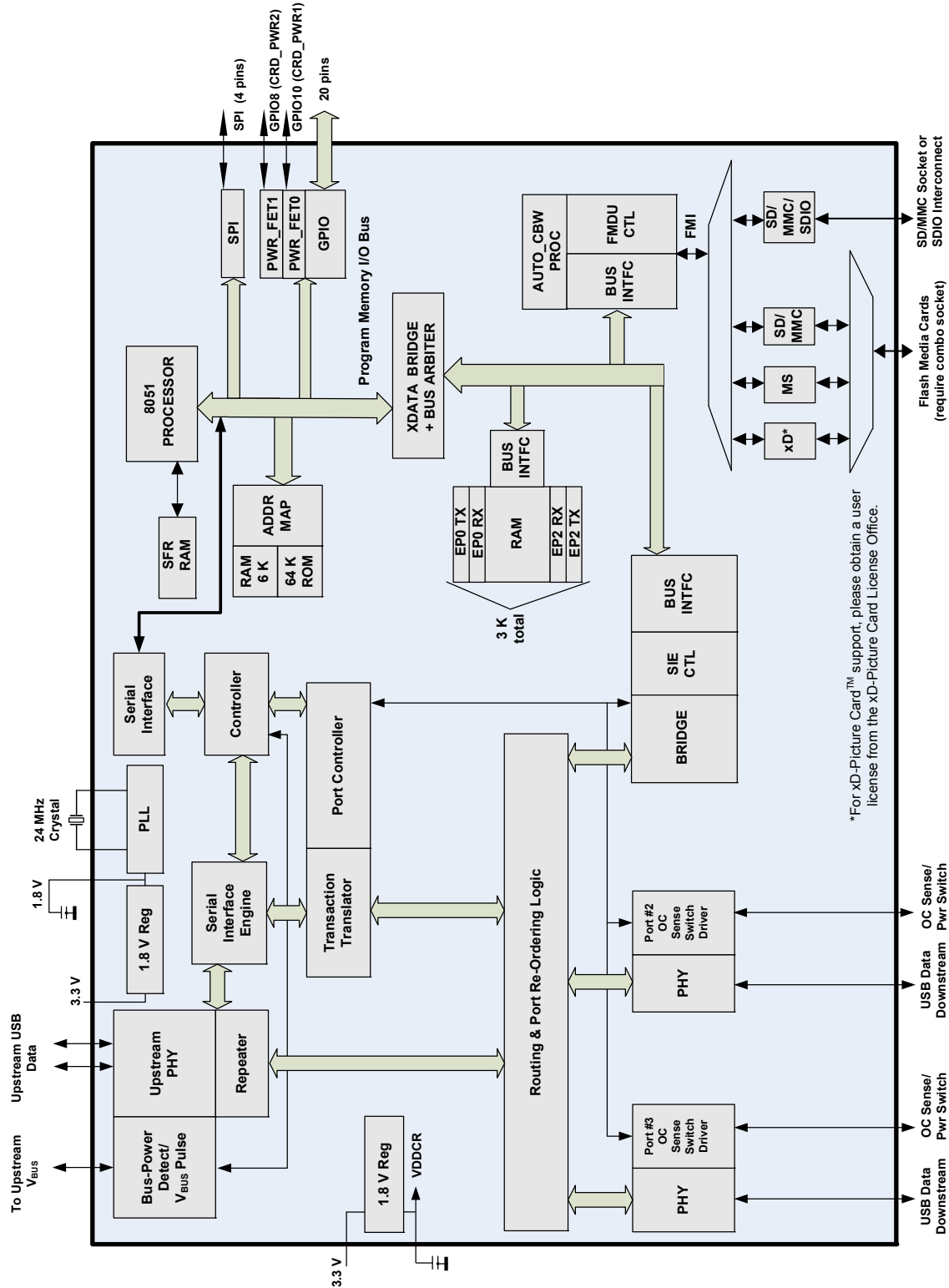


Figure 1 USB2660/USB2660i Block Diagram

# Package Outline

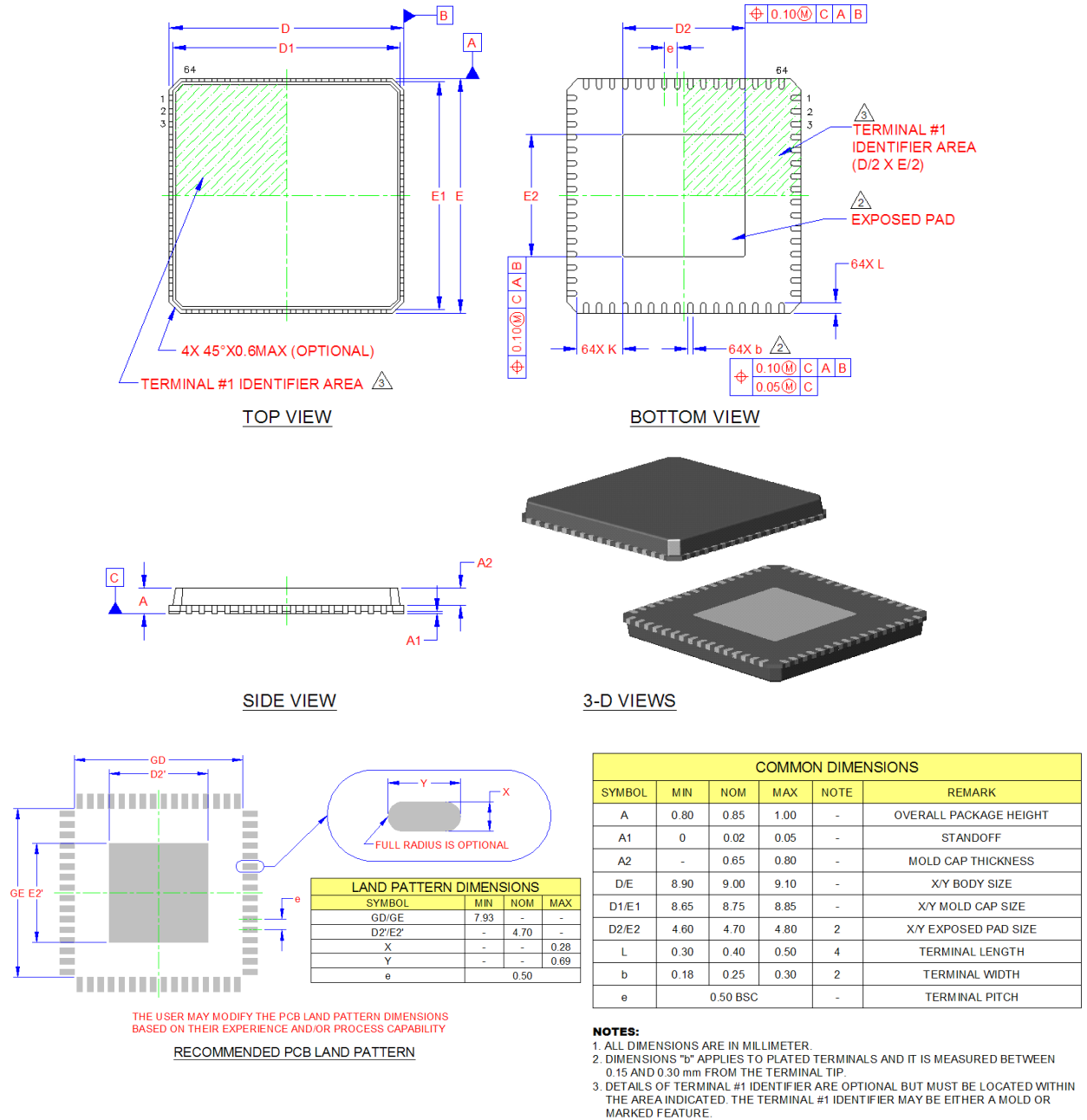


Figure 2 USB2660/USB2660i 64-Pin QFN