# USB82640 and USB82660



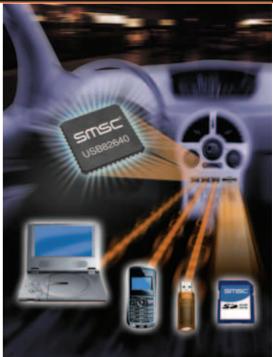
### Automotive USB 2.0 Hub and Flash Media Card Controller Combo

### **Features**

- Ultra fast flash media reader/writer with two exposed Hi-Speed downstream ports for external peripheral expansion
- Supports Secure Digital<sup>TM</sup> (SD) and SD High Capacity<sup>TM</sup> (SDHC), MultiMediaCard<sup>TM</sup> (MMC) and Memory Stick<sup>®</sup> (MS), MS PRO<sup>TM</sup> and MS PRO-HG<sup>TM</sup> cards
- Fully compatible with the USB 2.0 specification
- TrueAuto™ grade
  - Specifically designed, fabricated, tested, characterized and qualified for automotive applications
  - Service and support
- Built to more exacting requirements than AEC-Q100
- PortMap: Flexible port mapping and port disable sequence supports multiple platform designs
- PortSwap: Programmable ULSB differential-pair pin locations ease PCB design by aligning USB signal traces directly to connectors
- PHYBoost: Programmable USB transceiver drive strength for recovering signal integrity due to compromised system environment
- External and internal memory support for software customization
- Enhanced OEM configuration options available through an external I<sup>2</sup>C or SPI flash memory
- Customizable Vendor ID, Product ID and Device ID
- Integrated 3.3 V to 1.8 V regulator
- Enhanced ESD protection performance
- 48-pin (7 x 7 mm), QFN lead-free, RoHS compliant package
- 64-pin (9 x 9 mm), QFN lead-free, RoHS compliant package
- Temperature range: -40 °C to +85 °C (48-pin package)
- Temperature range: -40 °C to +105 °C (64-pin package)

# **Applications**

- Automotive integrated head unit
- Automotive consumer connectivity ports
- Portable device charging via USB



# **Ordering Information**

The USB82640 is available as:

USB82640 Tray (48-pin QFN)

Order No. B10263

USB82640 Tape & Reel (48-pin QFN)

Order No. B10262

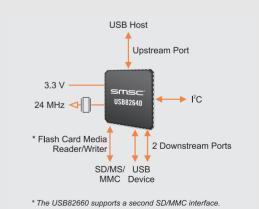
The USB82660 is available as:

USB82660 Tray (64-pin QFN)

Order No. B10265

USB82660 Tape & Reel (64-pin QFN)

Order No. B10264





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# **Description**

The USB82640 offers a versatile, cost-effective and energy-efficient hub controller with 2 downstream USB 2.0 ports and a Secure Digital/Memory Stick flash media interface. The USB82660 adds a second SD/SDIO port for accessing two memory cards at the same time. The flash media interface can support sustained transfer rates exceeding 35 Mbits/s, if the flash media, SDIO client and host support those rates.

The USB82640/60 is designed for applications that demand low power and a small footprint without compromising performance. Offering a high level of interoperability, the USB82640/60 allows system designers the flexibility of independent access to a wide selection of flash media and additional downstream USB access ports.

The USB82640/60 consists of USB 2.0 device transceivers with 2-port hub functionality, a fast 8051 microprocessor with Secure Digital/Memory Stick interfaces in a single, fully-integrated chip. It offers USB expansion as well as a flash media read/write interface capable of ultra high-performance operation. Various programmable features, including SMSC's unique PortMap, PortSwap and PHYBoost, are designed to aid system designers in simplifying PCB layout and optimizing bill-of-material cost.

The USB82660 has been specifically designed to meet the stringent requirements of the automotive industry and can support operation at temperatures up to +105 °C.

SMSC automotive grade devices are designed, fabricated, tested, characterized, qualified, and supported specifically for use in automotive applications. TrueAuto robustness begins with proprietary design for reliability techniques within the silicon IC itself and in the design of the package.

TrueAuto qualified technologies and processes are used to fabricate the products with enhanced monitors to continuously drive improvements in accordance with our zero dpm goals.

Product qualification is focused on the most demanding customer expectations and exceeds many of the automotive reliability standards including AEC-Q100.

SMSC TrueAuto services are provided by a dedicated organization composed of sales, marketing, applications engineering, operations, quality, and product support personnel specialized in meeting the requirements of the automotive customer.

Hub and Flash Media Card Controller Combo	Cost-effective, small-footprint solution integrates two functions into a single chip
Ultra Fast Flash Memory Access	Up to 35 Mbits/s data transfer rates
External and Internal ROM	Flexible programming for software architecture and enhanced overall system performance
Port <b>MAP</b>	Flexible port mapping and disable sequences support multiple platform designs.
PortSWAP	Adds per-port programmability to USB differential-pair pin locations. PortSwap allows direct alignment of USB signals (D+/D-) to connectors avoiding uneven trace length or crossing of the USB differential signals on the PCB.
PHYB00ST	Enables programmable four-level USB signal drive strengths in downstream port transceivers. PHYBoost attempts to restore USB signal integrity.

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