USB264X/2660 Family
USB 2.0 Hub and Flash Media Card Reader Combo Family

Ultra High Speed, Cost-Effective USB 2.0 Hub Controller and
Flash Media Card Reader Combo Family for Port Expansion
in Printer, PC, Consumer and Embedded SoC Applications

Summary
Microchip’s USB264X/2660 family combines an ultra-fast
interface between a USB host and today’s most popular
Flash media cards with a versatile, cost-effective and
power-efficient 2-port high speed USB 2.0 hub controller.
USB264x/2660 is designed for applications that demand
low power, small footprint and reduced BOM costs, without
compromising performance or features.

Offering a high level of USB 2.0 compliance and
interoperability, the USB264X/2660 family allows system
designers the flexibility of independent access to a wide
selection of Flash media readers and also provides
additional downstream USB access ports.

Each device in the USB264X/2660 family consists of USB
2.0 device transceivers with 2-port hub functionality, a fast
8051 microprocessor and Memory Stick® (MS), xD-Picture
Card™ (xD) and Secure Digital (SD) controllers in a single,
fully-integrated chip. The USB2660 has an additional
SD/SDIO port. This family of devices offers USB expansion
ports as well as a Flash card media reader/writer capable
of ultra high-performance operation. Average sustained
transfer rates exceeding 35 MB/s are possible if the
media and host can support those rates**.

Target Applications
- Printers
- Desktop and mobile PCs
- Consumer audio/visual (A/V)
- Digital TVs
- Monitors
- Media players/viewers
- Gaming consoles
- Digital photo frames
- Set top Boxes

Highlights
- Ultra-fast Flash media reader/writer with two exposed
downstream ports for external peripheral expansion
- Optimizes footprint with an approximate 40% board
space reduction compared to prior discrete devices
- Reduces power consumption by approximately 30%
versus alternative discrete solutions
- Supports MultiMediaCard™ (MMC)/SD,
MS/MS-Pro™/MS-Pro-HG and xD cards, among others
- USB2660 supports additional MMC/SD Card or SDIO port
- Internal code configurable using an external I²C™ EEPROM;
support for external code using an SPI Flash EEPROM
- Configurable software architecture supports
customization for customer-specific applications and
field upgradeable firmware
- Ability to place the device away from the main board
to deliver USB connectivity where it is needed within
the system
- 7 × 7 mm, 48-pin QFN package (USB264X family)
and 9 × 9 mm, 64-pin QFN package (USB2660); both
RoHS-compliant
- Industrial temperature range (−40° to +85°C)
options available

* xD licensing information is available on our website: www.microchip.com
** Results are based on actual measurements on evaluation platforms developed by Microchip, and are meant only as a general guideline, not as a guarantee. Actual customer results may vary based on a
number of factors, including board layout and measurement technique.
Features | Benefits
--- | ---
Hub and Card Reader Combo | Cost-effective, small-footprint solution integrates two functions into a single chip
External and Internal ROM | Flexible programming for software architecture and enhanced overall system performance
**PortMAP** | Flexible port mapping and port disable sequence supports multiple platform designs with minimal effort
**PortSWAP** | Programmable USB 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

**USB264X/2660 Family Application Scenarios**
- Provides a combination of multiple media card readers and USB expansion ports on a PC printer or embedded system.
- Allows Flash media cards and USB pen drives to function as portable media storage devices if user desires to play/display content on A/V appliances (e.g. TV, DTV, DVD, PVR, audio and video players, etc.).
- Enables user to print pictures to a photo printer or kiosk from a camera memory card or USB pen drive.
- Offers additional USB ports to system designers when the single host port is utilized for card reader functionality.
- Provides access to additional USB and card reader ports on a monitor.
- Provides flexible memory expansion for Embedded systems.
- Second SDIO port can be used to host wireless functions such as Wi-Fi®, GPS, Bluetooth®, among others (USB2660 only).

**USB264X Block Diagram**

**USB2660 Block Diagram**

**Application Block Diagram**

<p>| Which USB264X/2660 Family Member is Right For Your Design? |
|---|---|---|---|---|---|---|</p>
<table>
<thead>
<tr>
<th>Part Number</th>
<th>Number of SD/MMC Cards</th>
<th>Number of SD/MMC/SDIO Ports</th>
<th>xD</th>
<th>MS Family</th>
<th>Internal Program Memory</th>
<th>Industrial Temp. Range (−40 to 85°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB2640</td>
<td>1</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
</tr>
<tr>
<td>USB2640i</td>
<td>1</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>USB2641</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
</tr>
<tr>
<td>USB2641i</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>USB2660</td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>–</td>
</tr>
<tr>
<td>USB2660i</td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**www.microchip.com/usbsmsc**

Visit our web site for additional product information and to locate your local sales office.

Microchip Technology Inc. • 2355 W. Chandler Blvd. • Chandler, AZ 85224-6199

Microcontrollers • Digital Signal Controllers • Analog • Memory • Wireless

Information subject to change. The Microchip name and logo, the Microchip logo, dsPIC, PIC, are registered trademarks and MIWI, PICtail and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies. © 2013, Microchip Technology Incorporated. All Rights Reserved. Printed in the U.S.A. 5/13 D500001538A