General Description
The SMSC USB2250/50i/51/51i is a USB 2.0 compliant, Hi-Speed mass storage class peripheral controller intended for reading and writing to more than 24 popular flash media formats from the CompactFlash® (CF), SmartMedia™ (SM), xD-Picture Card™ (xD)\(^1\), Memory Stick® (MS), Secure Digital (SD), and MultiMediaCard™ (MMC) families.

The SMSC USB2250/50i/51/51i is a fully integrated, single chip solution 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.

General Features
- **128-pin VTQFP (14x14 mm) lead-free RoHS compliant package**
- Targeted for applications in which single or "combo" media sockets are used
- Supports multiple simultaneous card insertions
- Flexible assignment of number of LUNs and how card types are associated with the LUNs
- Hardware-controlled data flow architecture for all self-mapped media
- Pipelined hardware support for access to non-self-mapped media
- Order number with "i" denotes the version that supports the industrial temperature range of -40ºC to 85ºC

Hardware Features
- Single chip flash media controller with non-multiplexed interface for independent card sockets
- Flash Media Specification Revision Compliance
  - CompactFlash 4.1
  - Secure Digital 2.0
  - MultiMediaCard 4.2
- SDIO and MMC Streaming Mode support
  - Memory Stick 1.43
  - Memory Stick Pro Format 1.02
  - Memory Stick Duo Format 1.10
  - Memory Stick Pro-HG Duo Format 1.01
  - xD-Picture Card 1.2
  - SmartMedia 1.3
- Extended configuration options
  - xD player mode operation
  - Socket switch polarities, etc.
  - Media Activity LED

Software Features
- Optimized for low latency interrupt handling
- Reduced memory footprint
- Device Firmware Upgrade (DFU) support of external EEPROM or External Flash
  - Assembly line support
  - End user field upgrade support
  - DFU Package consists of driver, firmware, sample DFU application and source code, DFU driver API
- Optional custom firmware with up to 128 KB external ROM

Applications
- Flash Media Card Reader/Writer
- Printers
- Desktop and Mobile PCs
- Consumer AV
- Media Players/Viewers
- Vista ReadyBoost™

1.) xD-Picture Card not applicable to USB2251.
**ORDER NUMBER(S):**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>CompactFlash®</th>
<th>Memory Stick®</th>
<th>Secure Digital MultiMediaCard™</th>
<th>xD-Picture Card™</th>
<th>Operational temperature</th>
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<td>USB2250-NU-XX</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>0ºC to 70ºC</td>
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</tbody>
</table>

- **128-Pin VTQFP Lead-Free RoHS Compliant Package**
- “XX” in the order number indicates the internal ROM firmware revision level.
- Please contact your SMSC sales representative for more information.

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**PRODUCT PREVIEW**

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**Revision 2.0 (09-29-09)**

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**SMSC USB2250/50i/51/51i**
Chapter 1 Block Diagram

Figure 2 USB2250/50i/51/51i Block Diagram