

NXP native device controller ISP3582 based on Certified Wireless USB technology

Certified Wireless USB from the USB-IF

Combining the convenience of wireless with the performance and security of Hi-Speed USB, this native controller based on Certified Wireless USB is designed for portable applications and provides a low-power, small-footprint solution while enabling an optimal software architecture.

Key benefits

- ▶ WiMedia Multiband UWB
- ▶ Fully compliant with key specifications
 - *Wireless Universal Serial Bus Specification Rev. 1.0*
 - *WiMedia MAC Specification Rev. 1.0*
 - *MAC-PHY Interface Specification Rev. 1.0*
- ▶ Integrated ARM processor
 - Software load-sharing between ARM, system CPU
- ▶ Integrated RAM and ROM
- ▶ Flexible interfaces
 - 16-bit PIO with DMA slave support
 - 4 bit SDIO device with internal DMA
 - Fully compliant to final SDIO 1.10 and Draft SDIO 1.2 specifications
- ▶ Supports all USB class drivers, including mass storage, PTP, MTP, printing and communication class
- ▶ Intelligent power management
 - Power on during Tx/Rx, off when system idle
 - Very low sleep power
- ▶ I/O pads support 1.8 V to 3.3 V
- ▶ TFBGA112 (7 x 7 mm) package
- ▶ Module solutions available with third-party PHYs

Applications

- ▶ Wireless external storage device, portable HDD
- ▶ Mobile phone (synchronization, picture transfer)
- ▶ Digital still or video camera (picture transfer, printing)
- ▶ MP3 player, personal media player (transfer audio/video content)
- ▶ Printer (fast wireless printing)
- ▶ Scanner (image transfer)

Manufactured in an advanced 90-nm process, the ISP3582 is a device controller, based on Certified Wireless USB technology, with a highly optimized on-chip WiMedia MAC.

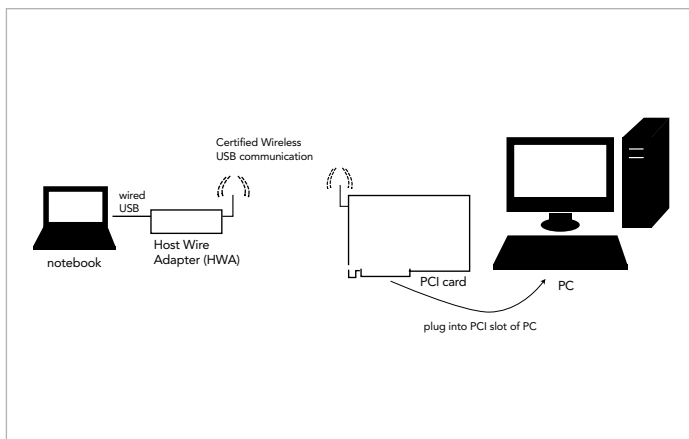
It supports a physical layer data rate of 480 Mbps and is compatible with the many processors that have a PIO or SDIO interface. Its integrated ARM controller increases system performance while handling the Certified Wireless USB software drivers.

The ISP3582 delivers all the speed and security of Hi-Speed USB in a wireless format. That means consumers can easily and wirelessly transfer data-intensive files such as video and high-resolution images between portable HDDs, printers, scanners, PMPs, DVCs, DSCs, and mobile phones.

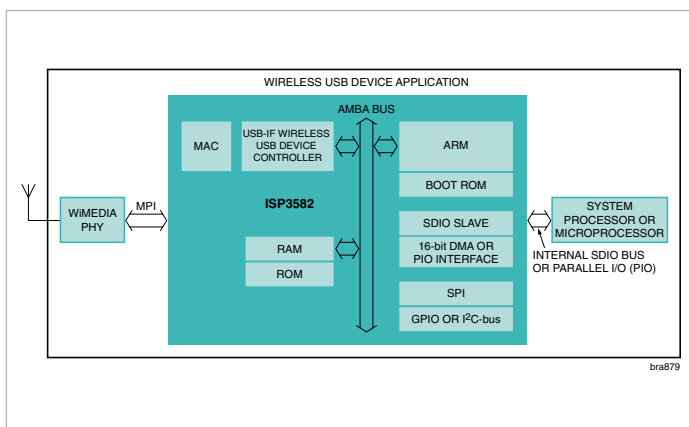
The design is based on a native architecture, so the ISP3582 offers low power and high performance at an optimal cost. In particular, ISP3582's patent-pending power-saving features place it at the forefront of low-power Certified Wireless USB solutions.

The ISP3582 was developed in conjunction with providers of host controllers, based on Wireless USB from the USB-IF's Wireless Host Controller Interface (WHCI) and Host Wire Adapter (HWA). Device functionality has been tested

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Application scenario of a Certified Wireless USB system



Example of a system set-up showing PIO interface with PCI-PIO bridge

extensively for interoperability with solutions from Intel and Microsoft, along with various PHY manufacturers. As a result, the ISP3582 is completely interoperable with other solutions based on Certified Wireless USB.

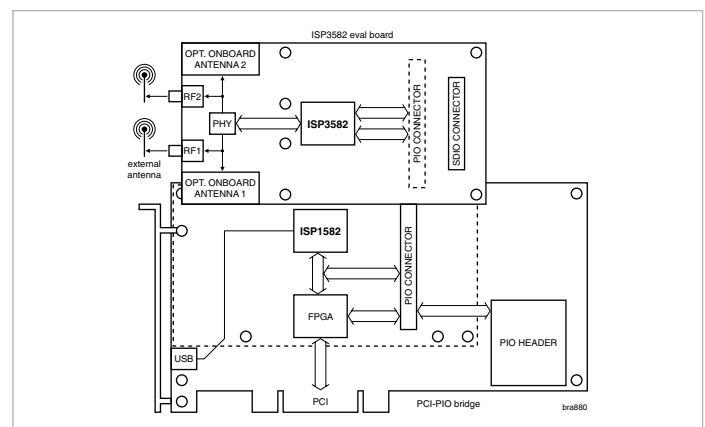
Module solutions that use third-party PHYs are also available.

PCI evaluation kit

The ISP3582 is available in an evaluation kit that makes development easy and efficient. The kit includes a board with the ISP3582 plus a PCI/PIO bridge that converts PCI traffic to PIO traffic and has an ISP1582 Hi-Speed USB device controller for wired association. A PIO or SDIO host system can be connected to the board via cables. The kit also includes Linux wireless USB device drivers, loopback software suite, and mass storage application.

System requirements for the ISP3582 evaluation kit

Operating system	Linux kernel V 2.4.18
CPU	Intel Pentium IV (or equivalent) or greater
RAM	128 MB minimum
Interface	PCI bus



ISP3582 PCI evaluation kit

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NXP Semiconductors is in the process of being established as a separate legal entity in various countries worldwide. This process will be finalized in the course of 2006.

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