



Wireless USB Hub Reference Design



Key Features

- Up to 480 Mbps air data rate
- Up to 100 feet operating distance
- Four external USB 2.0/1.1 ports
- Cable association
- Internal or external UWB antenna
- Co-existence with 802.11 and Bluetooth devices
- Compatible with Windows XP/Vista
- Host side software drivers
- GUI application for quick setup and connection management

Overview

The Wisair Wireless USB hub reference design delivers wireless connectivity to existing wired USB devices with a low cost, high throughput solution. USB devices can be placed anywhere in the room and can be accessed from any PC or laptop—eliminating the familiar tangle of wires around the desk area.

The reference design consists of two components: the wireless USB hub (DWA) and the host PC dongle (HWA). Both boards implement the WSR601 single CMOS chip, and are designed to meet WUSB and WiMedia specifications and worldwide regulation.

The wireless USB hub provides outstanding performance and link robustness, which is enabled by features such as dual UWB antennas, automatic rate adaptation, and radio channel selection. The WUSB host dongle combines the WSR 601 on a small foot print PCB, together with an on-board antenna.

Benefits

- Low BOM count
- Superior LOS and NLOS Performance
- Low power consumption

Reference Design Package

A complete software package includes a host-side driver and an end-user GUI application, accessible from the system tray for intuitive management of the wireless connection.

The reference design package includes all the tools and documentation needed to ensure a successful productization by ODM/OEMs, and includes:

- Designer guide
- User manual
- Data sheet
- Bill of materials
- PCB design files (schematic, layout, mechanical)
- UWB antenna design files
- Firmware for hub/dongle
- Production utilities and test procedures

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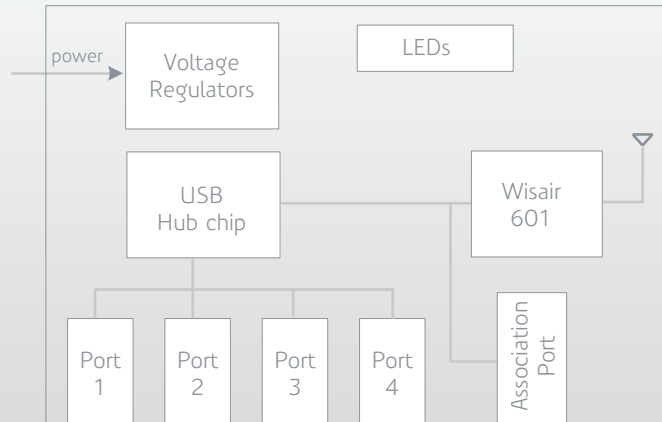
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WUSB Hub Block Diagram



About Wisair

Wisair is a leading provider of chipset solutions based on WiMedia Ultra Wideband (UWB) and Certified Wireless USB for consumer electronics, PC peripherals, and mobile devices.

With several decades of combined experience in the wireless industry, the Wisair team presents unmatched technical excellence. Wisair holds multiple UWB patents and is a member in the WiMedia alliance, the Wireless USB promoter group, and the Bluetooth SIG.

A privately-held company, and part of the RAD group, Wisair is headquartered in Israel with offices in the USA, Japan, Korea, Singapore and Taiwan.

Specifications

MAC/PHY

- Based on Certified Wireless USB 1.0 (Host and Device Wire Adapter)
- Cable association
- Asynchronous, isochronous data traffic
- Up to 480 Mbps data rate
- 3.168 to 4.752 GHz (WiMedia band group 1)
- Time frequency codes 1 to 4 (TFI), 5 to 7 (FFI)
- Output power: -41.3 dBm/MHz

Hub

- PCB size: 25x50 mm
- Power consumption <2W
- Ports: 4-7
- Interface: USB 1.1/1.2
- Antennas: internal or external
- Power supply: 5V external

Dongle

- PCB size: <23x55 mm
- Power consumption: <1W
- Interface: USB 1.1/2.0 (USB type-A)
- Antenna: ???
- LED indicators: power, traffic
- Control: enable/disable WUSB modem

General

- Operational temperature 0°C to 55°C
- Coexistence with 802.11 and Bluetooth devices
- FCC and TELEC regulation compliant
- Software drivers: Windows® XP/Vista
- Based on WiMedia PHY 1.1, WiMedia MAC 1.0
- RoHS compliant

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