

## Features

Fully integrated Wireless USB HWA solution

- Certified W-USB (1.0), WiMedia MAC (1.0) and PHY (1.1)
- 32-bit RISC processor core
- USB 2.0 device interface
- Integrated boot loader ROM
- Tx/Rx switch
- UWB filter
- High-accuracy crystal
- RF matching network
- All necessary passive components

Supports Certified Wireless USB Association Models

Compliant to FCC regulations for UWB operation

Supports all mandatory and optional data rate modes (53.3 Mbps to 480 Mbps)

Support for HWA Radio Control Interface

120 LGA SiP (Pb-free)

## Complete Single-Chip, All-CMOS Solution

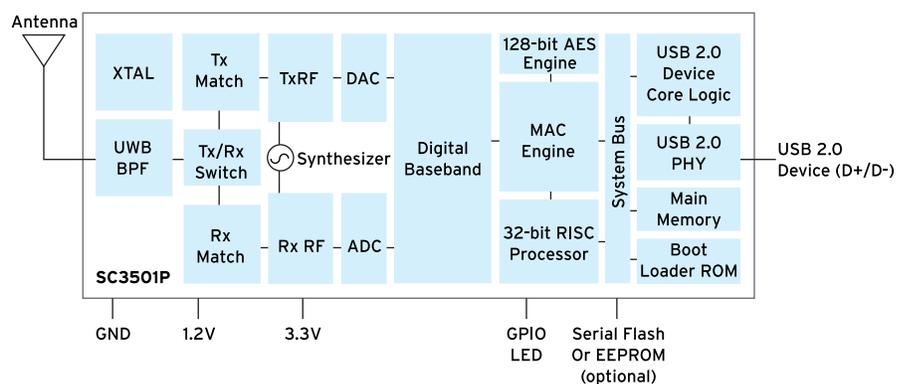
Staccato is committed to delivering a broad portfolio of single-chip, all-CMOS products for Certified Wireless USB (W-USB) from the USB-IF and for Ultra-Wideband (UWB) applications. Operating in the 3.1-4.8 GHz spectrum, the SC3501P is a complete System-In-Package (SiP) solution for Certified W-USB Host Wire Adapter (HWA) products. The small form factor design and high-level of integration minimizes design risk, lowers cost and accelerates time-to-market.

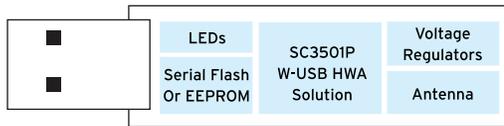
The SC3501P is implemented in a leading 110nm CMOS process technology, supporting all mandatory and optional Certified W-USB data rate modes (from 53.3 Mbps to 480 Mbps). All data transfer types (bulk, interrupt, isochronous and control) are supported over a secure wireless link using AES-128 hardware encryption.

## USB Unleashed!

USB changed the computing world by bringing true ease-of-use to PCs and peripherals. Certified Wireless USB simply takes it to the next level. Blazing-fast speed, ultra-low power, secure communication, and low-cost. All this plus the same ease-of-use that consumers are accustomed to. Certified Wireless USB untethers, untangles, unclutters and truly unleashes the potential of USB.

An HWA can easily transform any existing wired USB platform into a Certified Wireless USB environment. HWAs can be implemented in a variety of form factors, including simple external dongles and adapters, or even MiniCard and ExpressCard designs. Target applications include desktop and notebook PCs, media center PCs, monitor hubs and set-top boxes.





HWA Application Example

Supported Specs	Certified Wireless USB (1.0) WiMedia MAC (1.0) WiMedia PHY (1.1)
Frequency Range	3.1 to 4.8 GHz
Data Rate Modes	53.3, 80, 106.7, 160, 200, 320, 400, 480 Mbps (all mandatory and <i>optional</i> modes)
Data Transfer Types	Bulk, Interrupt, Isochronous, Control
Association Model Support	Cabled and Numeric
System-In-Package Integration	Single-chip, all-CMOS MAC+PHY USB 2.0 device interface Tx/Rx switch UWB filter High-accuracy crystal RF matching network All necessary passive components
Operating Temperature	-10 to +70°C (at full spec)
Operating Voltage	1.2V and 3.3V
Package	120 LGA (Pb-free)
Form Factor	12mm x 14.5mm x 2mm



SC3221R (Actual Size)

## Staccato HWA Reference Designs – SC3221R/SC3222R

Staccato also offers full turn-key reference designs that are in-form-factor, hardware proven and ready for volume production. These designs are intended to be certified by the FCC, the USB Implementer's Forum and the WiMedia Alliance. Staccato RDKs include working hardware samples, bill-of-materials, design files, production test guide, firmware and software and full documentation. The SC3221R is a small external HWA, similar in size to a USB flash drive, that plugs into any USB 2.0 port on a PC, and is enabled with an HWA driver. The in-form-factor PCB design is 16mm x 50mm, and comes complete with plastics. The SC3222R is a similar reference design in a MiniCard form factor.



SC3222R

## Team Staccato Partner Program

Team Staccato enables us to serve our customers with total solutions through partnerships with industry leaders throughout the value chain, including suppliers of antennas, software, system design and test equipment.

## UWB University

As a UWB pioneer and industry leader, Staccato Communications has combined its knowledge and expertise to create the UWB University (UWBU). UWBU live and on-demand online courses provide a comprehensive and detailed review of the most relevant industry topics for engineers and business people. Courses range from RF propagation to MAC functionality, antenna placement to software fundamentals, Bluetooth over WiMedia to security and extended range - and a host of business topics such as worldwide regulatory issues, compliance and interoperability and Certified Wireless USB case studies. For more information and for free enrollment, please visit [www.uwb-u.com](http://www.uwb-u.com).

## About Staccato Communications

Based in San Diego, Calif., Staccato Communications is an Ultra-Wideband (UWB) technology pioneer with applications expertise in Certified Wireless USB, Bluetooth and Internet Protocol (IP) connectivity. The fabless semiconductor company serves the personal computing, consumer electronics and mobile phone industries with small form factor, single-chip, all-CMOS wireless solutions. Staccato's WiMedia-based offerings include PHY, MAC, drivers, application software, development kits and reference designs.

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### Target Applications

- Desktop and Notebook PCs
- Media Center PCs
- Monitor Hubs
- Set Top Box
- Printers (with USB host functionality)
- PDAs and Handheld Computers
- Portable Media Players (PMP)

### RF Specifications

- Receiver sensitivity:
- 77.8 dBm at 106.7 Mbps mode
  - 74.5 dBm at 200 Mbps mode
  - 70.4 dBm at 480 Mbps mode
- Transmitter power up to -41.3 dBm/MHz

### Ripcord Part Numbers / Description

- SC3501P  
Certified Wireless USB HWA Solution
- SC3221R  
HWA External Reference Design Kit
- SC3222R  
HWA MiniCard Reference Design Kit
- SC3111D  
Certified Wireless USB Development Kit



6195 Lusk Blvd., Suite 200  
San Diego, CA 92121  
Tel + 1 858.812.1000  
Fax + 1 858.812.1001  
[sales@staccatocommunications.com](mailto:sales@staccatocommunications.com)

[www.staccatocommunications.com](http://www.staccatocommunications.com)