

SmartConnect WINC1500

Wireless Network Controller

Summary

The SmartConnect WINC1500 is an IEEE 802.11 b/g/n Internet of Things (IoT) network controller System on Chip (SoC). It offers the ideal add-on to existing microcontroller (MCU) solutions, making it easy to bring Wi-Fi® and network capabilities through SPI-to-Wi-Fi interfaces into your designs. The WINC1500 connects to any AVR® MCU, and has minimal resource requirements.

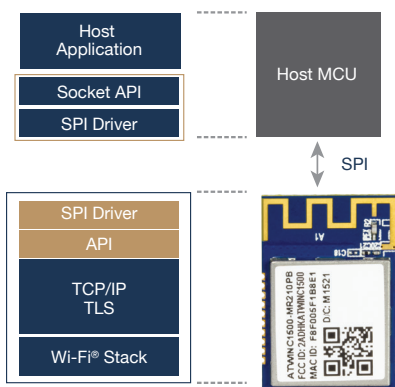


WINC1500 Target Applications

- IoT applications
- Smart appliances
- Multimedia streaming
- Safety and security
- Home automation
- Consumer electronics
- Industrial automation

The most advanced mode in the WINC1500 is a single stream 1 x 1 802.11n mode, providing up to 72 Mbps PHY of throughput. The WINC1500 features a fully integrated power amplifier, LNA, switch and power management modes.

The WINC1500 provides internal Flash memory as well as a SPI serial host interface. The only external clock source needed for the WINC1500 is a high-speed crystal or oscillator with a wide variety of reference clock frequencies supported (between 12–32 MHz). The WINC1500 is available in a QFN package.



Power Architecture and Consumption

The WINC1500 uses an innovative power architecture that delivers very-low power consumption along with high performance. This approach reduces the number of external components and optimizes your bill of material.

The WINC1500 has several Device States:

- PROVISION: Receive and transmit data anytime; send beacons as Wi-Fi SoftAP.
- IDLE LISTEN: Receive data via TIM/DTIM; transmit data anytime.
- IDLE: Not receiving or transmitting data. Remains associated with AP for poll.
- SUSPEND: Not receiving or transmitting data; no PS polls; completely disconnect from the AP.

Accelerating RF Design

To help accelerate design development, Microchip offers the WINC1500 as a single-chip module for fast integration, and as an XPRO wing that is compatible with any existing Xplained PRO Evaluation Board.

Key Features

- IEEE 802.11 b/g/n (1 x 1) for up to 72 Mbps
- Integrated PA and T/R switch
- Superior sensitivity and range via advanced PHY signal processing
- Wi-Fi direct, station mode and Soft-AP support
- Supports IEEE 802.11 WEP, WPA
- On-chip memory management engine to reduce host load
- 4/8 MB stacked Flash memory with OTA firmware upgrade
- Serial host interface: SPI
- TCP/IP protocol stack (client/server) sockets applications
- Network protocols (DHCP/DNS), including secure TLS stack
- Wireless Simple Configuration WPS (WSC)

Ordering Codes	Description
ATWINC1500-MR210PB1952	Certified WINC1500 Module Including 4 Mbit Flash + PCB Antenna/uFL connector
ATWINC1510-MR210PB1952	Certified WINC1510 Module Including 8 Mbit Flash + PCB Antenna/uFL connector
ATWINC1500-XPRO	Extension board to the Xplained Pro evaluation platform that allows you to evaluate the ATWINC1500 Wi-Fi network controller module
ATWINC1500-XSTK	Starter kit including Xplained Pro D21 board, WINC1500 Xplained Pro Extension Board demonstrating IoT setup with LED control and temperature measurements sent wirelessly through the Internet to a mobile device

The Microchip name and logo, the Microchip logo and AVR are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries. All other trademarks mentioned herein are property of their respective companies. © 2017, Microchip Technology Incorporated. All Rights Reserved. 6/17 DS70005266B