SmartConnect WINC1500

Wireless Network Controller

Summary

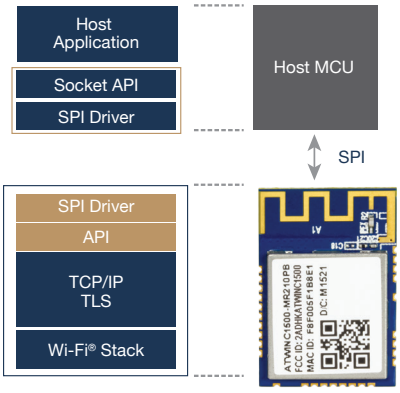
The SmartConnect WINC1500 is an IEEE 802.11 b/g/n Internet of Things (IoT) network controller System on Chip (SoC). It offers the ideal add-on to existing microcontroller (MCU) solutions, making it easy to bring Wi-Fi® and network capabilities through SPI-to-Wi-Fi interfaces into your designs. The WINC1500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

MICROCHIP

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

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