Atmel SmartConnect SAM W25

IoT Endpoint Module

Connecting to the Internet of Things Made Easy

The self-contained and certified Atmel® SmartConnect SAM W25 module, part of the Atmel® | SMART portfolio, brings wireless Internet connectivity to any embedded design. This integrated low-power module offers the ideal solution for designers with no previous 802.11, IP Stack or RF experience seeking to add Wi-Fi connectivity to their products. It provides connectivity to the Internet of Things (IoT) for the vast array of battery-powered devices and applications requiring the integration of wireless-local-network (WLAN) connectivity without compromising on cost and power consumption.

The Atmel SmartConnect SAM W25 module is based on the industry-leading WINC1500 Wi-Fi system-on-chip (SoC) and the latest ARM® Cortex®-M0+ processor technology. This turnkey system provides an integrated software solution with application and security protocols such as transport-layer security (TLS).

- Easy-to-use development kits are available for quick prototyping extensive library of project examples and applications are available via Atmel Studio IDE.
- Out of the box cloud connectivity with cloud agent software from any of the Atmel cloud partners.
- RF Certified modules accelerate time to market by saving certification cost and significant lab approval resources.

SAM W25 Target Applications

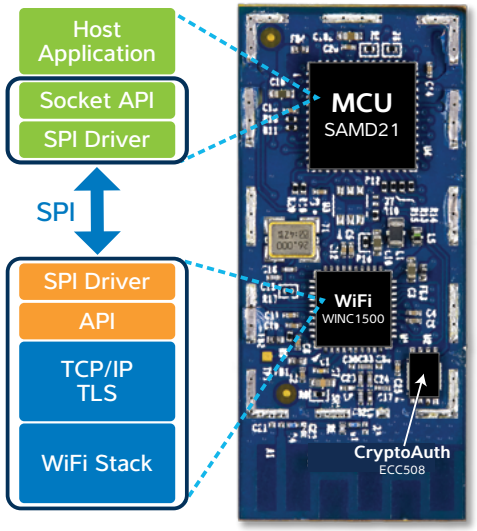
- IoT applications
- Smart appliances
- Multimedia streaming
- Safety and security
- Home automation
- Consumer electronics
- Industrial automation

Modules Specification

Parameters	Value
Transmit Power	+17dBm
Receive Sensitivity	-81 dBm, 10% PER, 11Mbps
Size	33.863 x 14.882mm
Connector Pins Pitch	1.0 mm
Operating Temperatures	40°C to +85°C
Certifications	Wi-Fi, FCC, CE
OTA Flash	SAM W25-MD2

Key Benefits

- Complete self-contained End Point Certified module including Atmel Cortex-M0+ based host MCU; One Stop Shop for MCU, Wi-Fi, Crypto and Module, reduces support time and increases efficiency
- Based on Atmel Low Power Wi-Fi SoC, WINC1500B Series; provides years of operation for Internet of Things (IoT) applications Integrated with network stack protocol
- Integrated with Atmel CryptoAuthentication™ device supporting ECDH (Elliptic Curve Diffie-Hellman) key agreement; Adds security to prevent physical attacks on the device or logical attacks on data transmitted between the device and the system, critical to every connected Internet of Things (IoT) node
- Cortex-M0+ based host MCU is more power efficient and integrated with a rich set of peripherals including USB and Peripheral Touch Controller (PTC); Powerful MCU with rich set of peripherals means it's flexible to operate as a host MCU in most IoT applications
- 8-bit internal SPI Flash memory with OTA firmware upgrade; Saves BOM cost for external Flash



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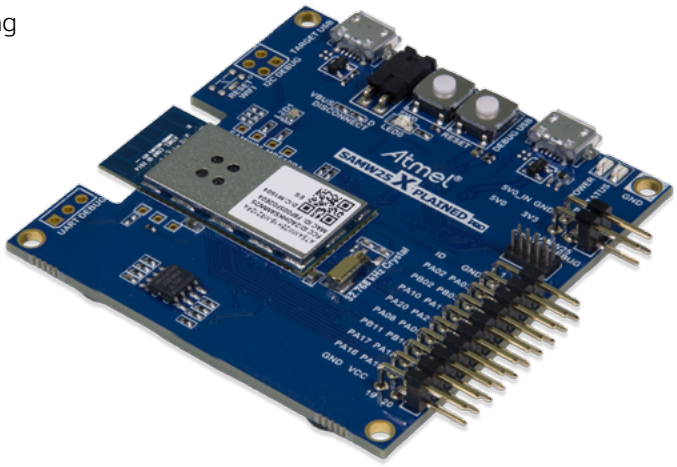
Key Features

- IEEE 802.11 b/g/n (1x1) 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- or 8-Mbit internal Flash memory with OTA firmware upgrade
- SPI, UART and I2C as host interfaces
- TCP/IP protocal tack (client/server) sockets applications
- Network protocols (DHCP/DNS), including secure TLS stack
- WSC (wireless simple configuration WPS)
- Atmel's Wi-Fi SoC and SAM D21 ARM Cortex-M0+ MCU
- Can operate completely host-less in most applications



Quick Start Guide for the SAMW25-Xplained Pro

- Download and install Atmel Studio (IDE): http://www.atmel.com/microsite/atmel-studio/
- Use the latest Atmel Software Framework (ASF), Integrated with Studio 7.0
- Download and Install the latest ATWINC1500 SW Package
- Follow large library of free source code and application example from SAMW25 project (e.g., Easy cloud connectivity. See figure)

Ordering Codes	Description
ATSAMW25-MR210PB	Certified Module with ATWINC1510B-MU-T and ARM Cortex—M0+ MCU SAMD21G18A-MU
ATSAMW25-MR510PB	Certified Module with ATWINC1510B-MU-T and ARM Cortex—M0+ MCU SAMD21G18A-MU with Crypto device ECC508
ATSAMW25-XPRO	Starter kit, including XPlained Pro board with ATSAMW25-MR510PB module

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