Atmel

SmartConnect Wi-Fi Solutions: SAM W23
Embedded ultra-low-power Wi-Fi solutions
connecting embedded systems to the 'Internet of Things'

Atmel | SMART

The Internet of Things. Made easy.

Atmel® SmartConnect Wi-Fi is a family of self-contained, low-power and certified modules bringing wireless Internet connectivity to any embedded design. These integrated modules offer the ideal solutions for designers seeking to add to integrate Wi-Fi connectivity with no previous experience with 802.11, RTOS, IP Stack or RF experience. SmartConnect Wi-Fi from Atmel opens the door of the Internet of Things to the vast array of battery-powered devices and applications requiring the integration of WLAN connectivity without compromising on cost and power consumption.

The Wi-Fi SAM W23 modules are based on Atmel's industry-leading ultra-low-power Wi-Fi SoC (System on Chip) combined with Atmel's latest ARM® Cortex®-M0+ based microcontroller technology. This turnkey system provides an integrated software solution with application and security protocols such as TLS, integrated network services (TCP/IP stack), and a standard Real Time Operating System (RTOS) which are all available through Atmel's Studio 6 integrated development platform (IDP).

SAM W23 Target Applications:

• Battery powered devices
• Smart appliances
• Healthcare
• Home automation
• Consumer electronics
• Industrial automation

SmartConnect SAM W23 key features:

Atmel's Wi-Fi SoC and SAM D21 ARM Cortex-M0+ MCU
WPA/WPA2, WEP, TKIP
Wi-Fi SoftAP/STA modes
Out Of the Box Network Services
(TCP/IP, UDP, HTTP, HTTPS, DHCP, DNS, SSL/TLS)
Ultra-low <20uA SUSPEND current for years of battery life
Can operate completely host-less in most applications
Direct-connect to battery 1.8V to 3.6V range
Options from 0dbm to +17dbm output power
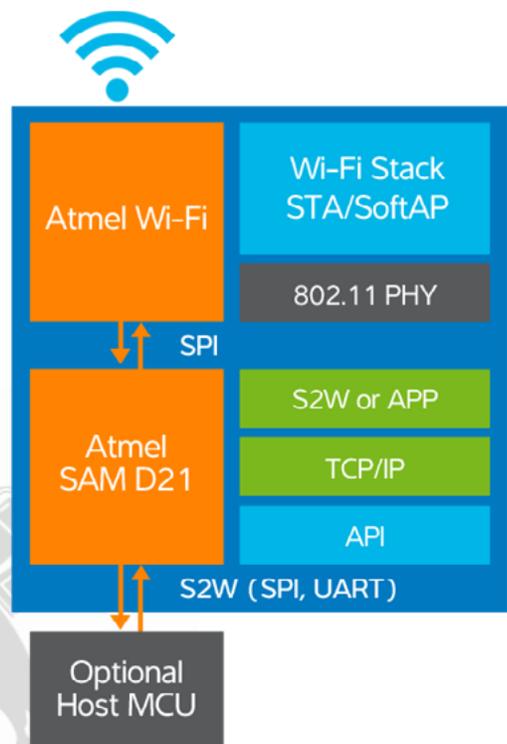
Modules Specification

| Parameters	Value
Transmit Power	0dBm, +10dBm, +17dBm
Receive Sensitivity	-81 dBm,10% PER, 11Mbps
Size	20.0 x 34.3 mm
Connector Pins Pitch	1.0 mm
Operating temperatures	0°C to +70°C
Certifications	Wi-Fi, FCC, CE
OTA flash	SAM W23-MD2
Power Amplifier Front-End Module	SAM W23-MD5
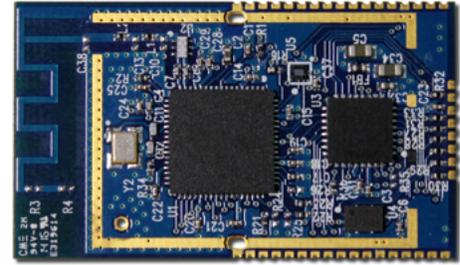
Ultra-Low Power

Atmel's Wi-Fi SoC and MCUs are optimized for battery-powered applications with a wide 1.8V to 3.6V voltage range and a <20uA deep sleep current with an instant on/off radio architecture. This results in an ultra low power profile when imple-mented in an IoT Edge Node sending data to an SSL server several times per day. With the SAM W23, Wi-Fi can now penetrate markets and products requiring years of battery life.

Getting Started

Mounted on an XPRO Wing, SAM W23 is compatible with any existing Atmel Xplained Pro evaluation board. The Smart-Connect library is a turnkey Software Framework available in Atmel Studio that removes the need to understand the Wi-Fi stack. This allows developers to focus on adding functions.
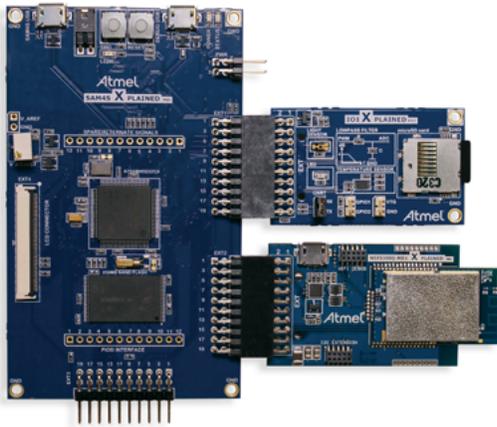
Part Number	Features	Sampling
ATSAMW23G18-MD110PA	Entry level	June 2014
ATSAMW23G18-MD210PA	Onboard OTA Flash	June 2014
ATSAMW23E18-CHPST1A	Chipset	June 2014
ATSAMW23-NC-STK	Starter Kit	June 2014
ATSAMW23G18- MD510	Onboard PA FEM	Sept 2014

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