

Product Brief SPB800, Wireless LAN Module 802.11b/g + TCP/IP , UART Interface

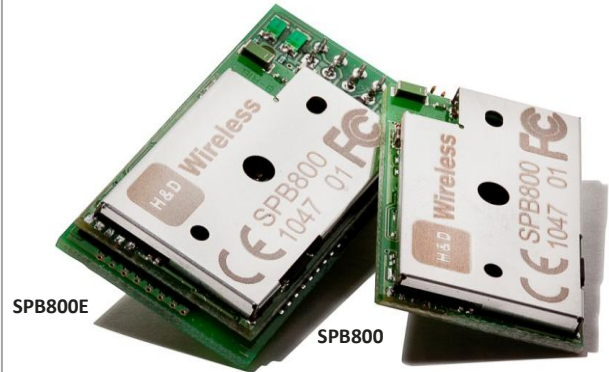
INTRODUCTION

The SPB800 solution is a complete Wi-Fi module with state of the art embedded security protocols and low power features. The SPB800 includes a matching low power, high performance 32-bit Microcontroller unit. The solution offers immediate wireless connectivity to the Internet or a local area network for any devices supporting an UART or RS-232/RS-485 interface.

The SPB800 solution removes the need for Wi-Fi drivers, IP-stack and security protocols on the host CPU. The SPB800 solution provides the fastest possible design turn around for Customers.

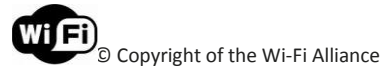
SPB800 Serial to Wi-Fi offers a cost effective solution for retrofitting existing or new UART applications with Wi-Fi Connectivity!

SPB800 WLAN Module family 802.11b/g (Wi-Fi + TCP/IP)



SELECT Wi-Fi USAGE FOR YOUR APPLICATION:

- 1) Virtual Serial to Wi-Fi mode
- 2) oWL © Pico API mode



Energy Control

- Automatic Meter Reading
- Sensor networks
- Smart Homes climate control , A/C



Fitness & Healthcare

- Fitness equipment
- Wi-Fi scales
- Remote Patient monitoring

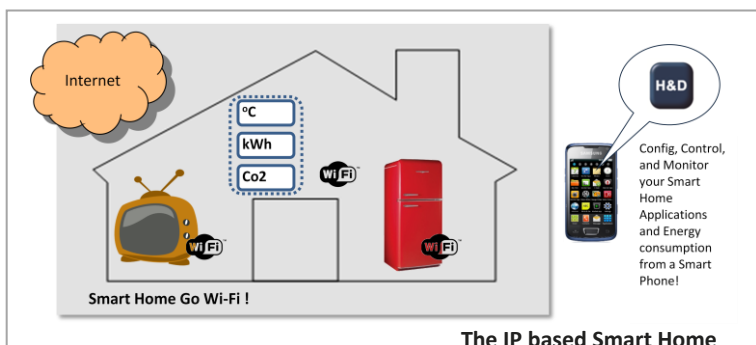


M2M, Industrial Automation

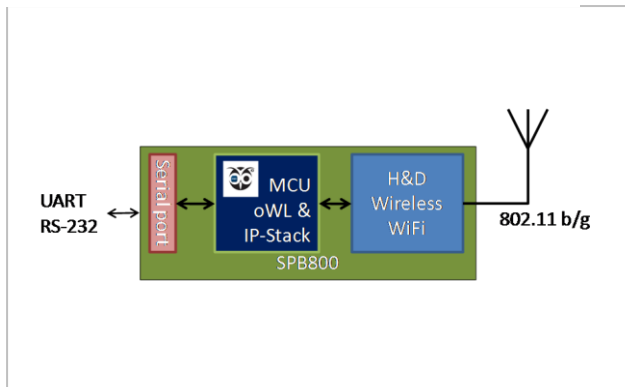
- Sensor for fire, smoke and gas alarms
- M2M services, vending machines
- Security systems

SPB800 allows any Microcontroller/CPU with UART interface to access the Wi-Fi network for accessing a LAN or Internet
The SPB800 works in two different modes (firmware):

Product	SPB800	SPB800P
Mode (firmware)	Serial to Wi-Fi	oWL © Pico API
Driver	NO	YES (2kB on host)
Sockets	1 TCP	4 RAW 4 UDP 4 TCP
Full TCP/IP Stack included	✓	✓
Protocols supported on host	n/a	✓ ANY
Protocols on device (module)	TCP, HTTP, DHCP, ICMP, IP	HTTP, DHCP, ICMP, TCP, UDP, IP
Reference designs	HDA800 – starter kit	http://pico.hd.wireless.se Example implementations of different protocols on host incl. Web server reference designs.
User Scenario	Wi-Fi bridge.	Wi-Fi bridge, with full control over application protocols and socket usage.
Wireless device configuration mechanism.	✓ SoftAP	✓ SoftAP



Block Diagram SPB800 WLAN Module



Software

The SPB800 is easy to integrate with any 8-bit or 32-bit processor and is supplied with pre-flashed Software as a Serial port adapter or optionally support oWL pico API command interface (equivalent to AT commands). IP and security parameters can be pre-set in the unit.

H&D Wireless provides a Software suite, SDK oWL Pico for serial to WLAN conversion. The oWL© Pico wraps a simple character based protocol over a serial port for WLAN configuration and control. Visit:

<http://pico.hd-wireless.se>



***Soft AP:** makes it possible for a product to connect to another client without the need for an available network, i.e no Wi-Fi access point will be needed and a small local network can be setup with up to 4 clients. **Note:** Soft AP supported on SPB800 from HW rev. R4A

Evaluation Package

1. H&D Wireless provides a SPB800 starter Kit – the [HDA800](#) – Your engine to Develop and test your application with a SPB800-E programmed in Serial _to_ Wi-Fi mode

2. SPB800E with owl-pico FW is fully supported on AT AVR XPLAIN Evaluation kit.

Standards Compliance

Country	Approval authority	Regulatory	Frequency band
USA	FCC	FCC	2.4-2.4835
Canada	IC	RSS	2.4-2.4835
EU	National	ETSI	2.4-2.4835

Partners

H&D Wireless AB, official Atmel Wi-Fi partner



<http://www.atmel.com/wifi>

Specifications

Core CPU	32-bit MCU
Wireless Network Standard Support	IEEE 802.11b/g
Frequency Band	2.412-2.484 GHz
Operation Modes	<ul style="list-style-type: none"> ✓ API driver mode - owl-pico ✓ Serial Mode: UART to WiFi
Modulation Techniques	QPSK, 16QAM, 64QAM DBPSK, DQPSK, CCK, OFDM with BPSK
Hardware interfaces	<ul style="list-style-type: none"> ✓ UART ✓ RS-232* (in EVK, only)
Network protocols	TCP/IP, DHCP, UDP/IP, ICMP, HTTP
WLAN functions, QoS	Power save modes, automatic roaming, Infrastructure mode and Soft AP*
Wireless Security	<ul style="list-style-type: none"> ✓ WEP-64 ✓ WEP-128 ✓ WPA-PSK ✓ WPA2-PSK
Hardware dimensions	34x22x5 mm
Current consumption	TX :186mA, RX:66mA, Lowest state: 50 nA
Supply Voltage	3.0-3.6V
Operating Temperature, degrees C	-20° - + 70° (commercial) -40° - + 85° (industrial)
Supported UART baud rates	<ul style="list-style-type: none"> ✓ Supports all standard baud rates from 9600bps to 3.6 Mbps

Order Information

Part Number#	Description	Image
SPB800-B SPB800P-B	802.11b/g, UART Complete system ready Wi-Fi moduleChip antenna	
SPB800-D SPB800P-D	External antenna, U.fl connector	
SPB800P	Pre programmed with owl© Pico API. With chip antenn or external	
SPB800E SPB800PE	SPB800 mounted on a test board, 10 -pin socket. Supported on AT_AVR EXPLAIN	
HDA800	SPB800 Evaluation Kit: SPB800E, PC connection card, cables and Software package	

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Technical Support

Software drivers
Wi-Fi Integration
Reference designs
Documentation

Turnkey Solutions

The reference designs provided are turnkey solutions that will work first time and can be modified and used for customers own products.

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