Making Wi-Fi Connectivity easy on Microcontroller platforms

H&D Wireless

Product Brief SPB800, Wireless LAN Module 802.11b/g , 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 a UART and RS-232 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 offers a cost effective solution for retrofitting existing or new UART applications with Wi-Fi Connectivity!

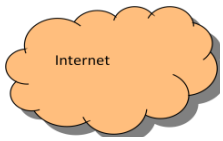
Typical applications include:

Energy Control
- Automatic Meter Reading
- Sensor networks
- Smart Homes climate control

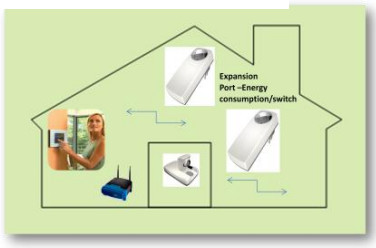
Fitness & Healthcare
- Fitness equipment
- Wi-Fi scales
- Remote Patient monitoring

Industrial Control
- Sensor for fire, smoke and gas alarms
- Pressure, temperature and level sensing
- Security systems

Standard Wi-Fi AP



The IP based Smart Home



SPB800 WLAN Module 802.11b/g

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KEY FEATURES

- ✓ **Fully integrated Wi-Fi HW and Wi-Fi MAC**
- ✓ **Fully compliant with IEEE WLAN 802.11b/g**
- ✓ **Allows any Microcontroller/CPU with UART interface to access the Wi-Fi network for accessing a LAN or Internet.**
- ✓ **Full IP-stack included**
- ✓ **Security and Hardware encryption accelerator up to 128 bit**
- ✓ **UART interface**
- ✓ **Data Rates: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54Mbps**
- ✓ **Wi-Fi SDK oWL © Pico.**
- ✓ **Web server reference designs available for download**
- ✓ **High RF output TX power and RX sensitivity**
- ✓ **Delivered fully tested and calibrated**
- ✓ **FCC/CE approved**
- ✓ **Completely integrated RF parts including the internal antenna**
- ✓ **Option for external antenna connector**
- ✓ **Supply voltage 3.3V**

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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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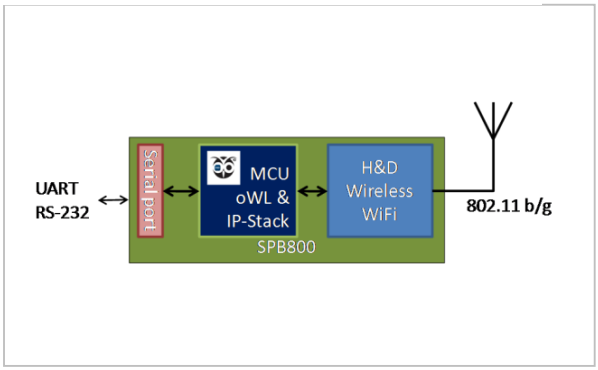
Block Diagram SPB800 WLAN Module



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 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.

Evaluation Package

H&D Wireless provides an adapter solution to the SPB800 – evalution kit SPB403, fully supported on AT_AVR_XPLAIN Evaluation kit. A 2kB host driver, the oWL© Pico SDK is included.

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

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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	✓ oWL-pico (IP stack on SPB800) ✓ Serial to WiFi
Modulation Techniques	QPSK, 16QAM, 64QAM DBPSK, DQPSK, CCK, OFDM with BPSK
Hardware interfaces	✓ UART ✓ RS-232* (in EVK only)
Network protocols	TCP/IP, DHCP, UDP/IP, ICMP, HTTP
WLAN functions, QoS	Power save modes, automatic roaming, Ad-hoc and Infrastructure mode
Wireless Security	✓ WEP-64 ✓ WEP-128 ✓ WPA-PSK ✓ WPA2-PSK
Hardware dimensions	34x22x5 mm
Current consumption	TX :186mA, RX:77mA, , Power save: 7mA (2s listen interval) Sleep: 1mA
Supply Voltage	3.0-3.6V
Operating Temperature, degrees C	-20° - + 70° (commercial) -40° - + 85° (industrial)
Supported UART baud rates	✓ Supports all standard baud rates from 9600bps to 3.6 Mbps

Order Information

Part Number#	Description	Image
SPB800-B	Chip antenn	
SPB800-D	External amtenna, U.fl connector	
SPB800E	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	

For additional information please contact Sales at H&D Wireless AB.

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