

# Product Brief HDG204, Wireless LAN 802.11b/g System in Package – Preliminary, Optimized for High Volume

**HDG204** 

WLAN 802.11b/g SiP

#### INTRODUCTION

The HDG204 is a complete Wireless LAN System in-Package (SiP) with ultra low power consumption, optimized for embedded devices. The HDG204 Wi-Fi solution is supported on leading Microcontroller platform and is optimal for developers that want to build wireless internet connected devices for the Smart Home, Clean Tech, Multimedia and Industry automation market!

With the HDG204 developers are targeting wireless sensors for industrial and home control, AMR for smart and green energy control, remote device management such as location tracking and the growing segment of equipment and consumer electronic devices such as Portable Media devices, IP-radio, home security, wireless speakers and IP audio devices.

The HDG204 SiP format, with its complete system functionality, means quicker design cycles, lower risk and simplified manufacturing, all in a very small package (8 × 8 mm). Lack of external components simplifies assembly test and reduces yield loss. The HDG 204 SiP delivers a complete and fully tested and trimmed implementation of 802.11b/g functionality. The HDG204 solution is Pre- tested, calibrated and certified resulting in lowest possible production and system cost.

"Things will be IP-numbered"
That wireless communication will be built into a new category of products to make internet access possible and that embedded Wi-Fi will be the natural choice. Re-use your existing standard Wi-Fi infrastructure for a new varity of devices.

H&D Wireless will propel your application!  $\mathcal{L}_{\mathcal{N}} = \mathcal{L}_{\mathcal{N}} = \mathcal{L}_{\mathcal{N}}$ 





SPR204:

HDG204 mounted on SD EVK

- Ultra low power consumption solution for embedded applications.
- ✓ Low Cost.
- External interfaces SDIO and SPI
- ✓ High RF output TX power (+17dBm) and RX sensitivity
- ✓ Supports multiple SW features incl 802.11e/i (Security, Quality of Service)
- ✓ Low number of external discrets needed: 19 + antenna
- External chips:40MHz (or from system)
- ✓ Pre-calibrated and programmed with MAC address.
- ✓ No RF trimming needed
- ✓ 32KHz from host CPU or internal
- ✓ WEP and AES hardware encryption accelerator up to 128 bit for WEP and WPA2 support.
- On-chip RF filter for the ISM band 2.4GHz
- An internal 32 kHz oscillator maintains real time in power save mode, allows the high frequency clock to be turned off
- Extensive DMA hardware support for data flow to reduce CPU load.
- On-board 160 kB SRAM and 1 kB EEPROM eliminates need for external FLASH or RAM.
- ✓ Internal Boot-ROM. This allows firmware to be downloaded into SRAM from the host.
- ✓ Calibration data stored in internal EEPROM
- ✓ RoHS Compliant

# www.hd-wireless.se



H&D Wireless AB Norgegatan 1 164 32 Kista, Sweden Tel: +46-8-7509977 Fax:+46-8-7509977 E-mail: sales@hd-wireless.se info@hd-wireless.se

#### International

North America H&D Wireless AB 21 Ship Rock Road North Hampton, NH 03862, USA Tel: +1 (603)379-2304 E-mail: art.ryder@hdwireless.se

APAC Regional Office Hong Kong E-mail: sales@hdwireless.se

# Global Presence & Distribution

- NORTH AMERICA
- EUROPE
- ASIA
- MIDDLE EAST
- AUSTRALIA
- SOUTH AMERICA

### **Technical Support**

Software drivers Wi-Fi Integration Reference designs Documentation

#### **Turnkey Solutions**

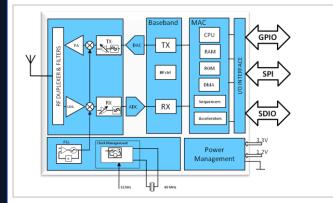
The reference designs provided are turnkey solutions that will work first time and can be modified and used for customers own products.

© H&D Wireless AB . All rights reserved.

Web site:

www.hd-wireless.se

#### HDG204 Block diagram



# Software

H&D Wireless provides a unique Software API, SDK oWL© - A complete programming interface for embedded Wi-Fi applications



#### Software Key features - WiFi API SDK oWL

- Smallest size: 1 40KB ( 2KB in pico version)
- Preintegrated with lw-ip
- WiFi manager Reference design for configuration of Wi-Fi incl GUI

# **Evaluation Package**

H&D Wireless provides an adapter solution to the HDG204 –SD evaluation card SPB204 mounted with HDG204, fully supported on AVR/ARM/Cortex-M3 platforms. A host driver, the oWL SDK is included.

#### Partners:

Atmel® Corp. Wi-Fi partner



### **Specifications**

Wireless Network Standard Support	IEEE 802.11b/g	
Frequency Band	2.412-2.484 GHz	
Modulation	QPSK, 16QAM, 64QAM	
Techniques	DBPSK, DQPSK, CCK, OFDM	
	with BPSK	
Hardware	SPI	
interfaces	SDIO	
	GPIO	
WLAN functions,	Power save modes,	
QoS	automatic roaming, Ad-hoc,	
	Soft AP* and Infrastructure	
	mode	
Wireless Security	✓ WEP-64	
	✓ WEP-128 ✓ WPA-PSK	
	✓ WPA-PSK	
	WIAZISK	
Hardware	8x8x1,2mm	
dimensions		
Power	TX: 590mW, RX 220mW	
consumption	Power save: 0,4mW	
	(2s listen interval)	
Supply Voltage	Sleep:0,2mW 2.75-3.6V	
Supply Voltage		
Operating Temperature,	-40° - + 85° (industrial)	
degrees C		
acpices c		

**Order Information** 

Oraer Information		
Part Number#	Description	Image
HDG204-DN-2	Wi-Fi SiP 802.11b/g component in 44-pin QFN, SDIO, SPI. Surface mounting	Fee M. 1944 6-724 137-74
SPB204-AL-1	SD card format Wi-Fi board, SDIO. SPI support has HDG204 mounted. Chip antenna + ext RF test port	

For additional information please contact <a href="mailto:sales@hd-wireless.se">sales@hd-wireless.se</a> © Copyright 2012, H&D Wireless AB. All Rights Reserved

:

<sup>\*</sup> SoftAP included in H&D Software suite.