Product Brief HDG200, Wireless LAN
802.11b/g/n System in Package – Preliminary, Optimized for High Volume
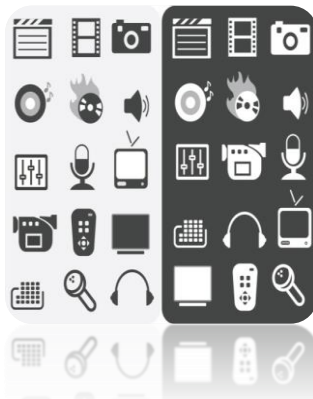
INTRODUCTION

The HDG200 is a complete Wireless LAN System in-Package (SiP) with ultra low power consumption, optimized for embedded devices. The HDG200 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! The HDG200 delivers a data transfer speed up to 72Mbps.

With the HDG200 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 HDG200 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 HDG200 SiP delivers a complete and fully tested and trimmed implementation of 802.11b/g/n functionality. The HDG200 solution is Pre- tested, calibrated and certified resulting in lowest possible production and system cost.

HDG200
WLAN 802.11b/g/n

SPB200 – Design vehicle
HDG200 mounted on SD EVK

8mm

8mm
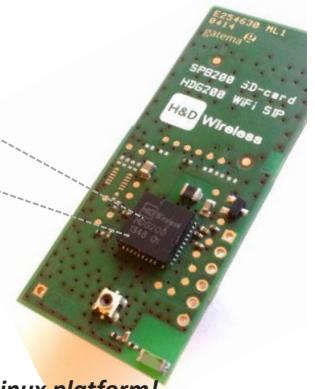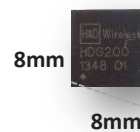
Add Wi-Fi capability to your Linux platform!
http://linux.hd-wireless.se/bin/view/Linux/HDG200
Wi-Fi © Copyright of the Wi-Fi Alliance

KEY FEATURES – HDG200

- ✓ 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

"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.
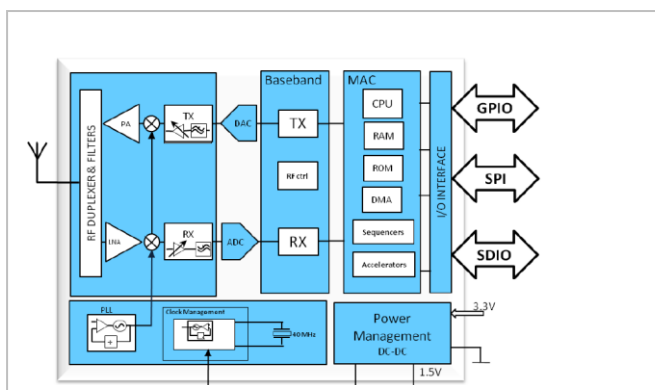
H&D Wireless AB -
Making Wi-Fi Connectivity easy for
Smart Home applications and sensor networks

http://www.hd-wireless.se

HDG200 Block diagram

Software

The HDG200 device driver implements and reuses tools and interfaces that are de-facto standard in Linux systems. Conceptually, the linux driver could be used on any host platform that supports Linux.

Demo images available for the following platforms:
Atmel SAMA5 Family: SAMA5D3x-EK
Atmel SAM9 Family: SAM9RL-EK
Freescale i.MX6Q Family: MCIMX6Q-SDB SABRE Board for Smart Devices (imx6qsabresd)

Add Wi-Fi capability to your Linux platform!

H&D Wireless Linux driver distribution is license free:
http://linux.hd-wireless.se/bin/view/Linux/HDG200

Evaluation Package

The HDG200 design vehicle is called SPB200.
A SD card format mounted with HDG200, supported on Linux based platforms.

Distribution:

Specifications

Wireless Network Standard Support	IEEE 802.11b/g/n
Frequency Band	2.412-2.484 GHz
Data rates	802.11b at 1, 2, 5.5 and 11 Mbps 802.11g at 6, 9, 12, 18, 24, 36, 48,and 54 Mbps 802.11n at 6.5, 13.0, 19.5, 26.0, 39.0, 52.0, 58.5, 65.0, 72.2 Mbps
Hardware interfaces	SPI SDIO GPIO
WLAN functions, QoS	Power save modes, automatic roaming, Ad-hoc, Soft AP* and Infrastructure mode
Wireless Security	✓ WEP-64 ✓ WEP-128 ✓ WPA-PSK ✓ WPA2-PSK
Hardware dimensions	8x8x1,2mm
Power consumption	49mA RX, 197mA TX och 5uA shut-down.
Supply Voltage	2.75-3.6V
Operating Temperature	-40° - + 85° (industrial)

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

Order Information

Part Number#	Description	Image
HDG200-DN-2	Wi-Fi SiP 802.11b/g/n component in 44-pin QFN, SDIO, SPI. Surface mounting	
SPB200-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 sales@hd-wireless.se
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