

Product Brief: DRF104-H&D Wireless Software: Wi-Fi Driver and API

APPLICATIONS

Home Automation

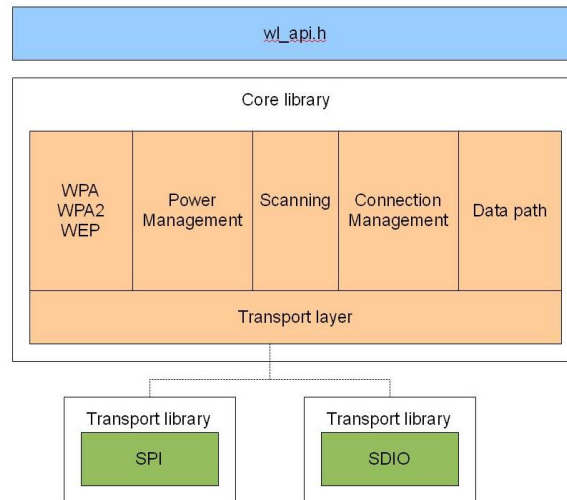
The DRF104 WiFi solution is supported on leading Microcontroller Unit (MCU) platforms for quick start for developers that want to enter the home automation market such as AMR, surveillance, access control or general home appliances.

Industry Sensor Networks

WiFi in combination with Microcontroller platforms (MCU) can easily be installed and used for Industry sensors or remote control thanks to the pre-integration of the EVK and the availability of Wi-Fi infrastructure.

Media Applications

In all media applications the problem of how to access and change the media is easily solved with Wi-Fi and with the high speed and security functions of 802.11, media such as mp3, IP-radio or video are transferred fast and secure.



The DRF104 software implements the full IEEE 802.11b/g wireless LAN MAC protocol as well as a platform independent WiFi SW API. It supports BSS (basic service set) and IBSS (independent basic service set) operation under the DCF (distributed control function). Low-level protocol functions such as RTS/CTS, acknowledgement, fragmentation, de-fragmentation, and automatic beacon monitoring are handled by the firmware together with the radio IC without host intervention. Passive or active scanning is performed autonomously once initiated by host command.

The firmware part of the DRF104 is downloaded by the driver into the on-chip RAM of the HDG104, eliminating the need for an external ROM or Flash memory

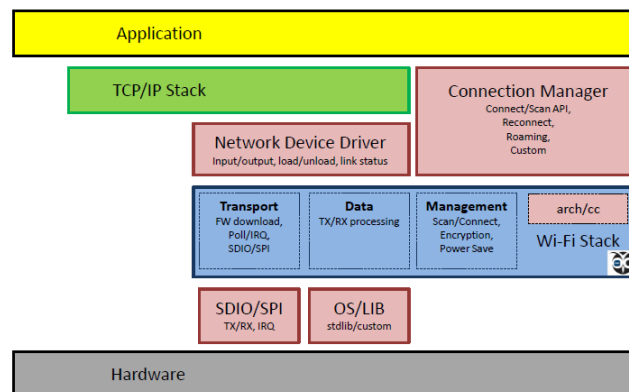


Figure 1: Wi-Fi Driver Architecture, H&D Wireless AB

Software features includes:

- ✓ All Data Rates from 1 to 54Mbps
- ✓ Modulation: QPSK, 16QAM, 64QAM DBPSK, DQPSK, CCK, OFDM with BPSK
- ✓ Hardware accelerators for WEP, TKIP and CCMP
- ✓ Scattered DMA for optimal CPU off load on data transfers operations.
- ✓ Additional security features according to 802.11i such as driver support, pre-authentication and TSN.
- ✓ 802.11-compliant power management and enhanced power management
- ✓ Support for 802.11 compliant IBSS networks
- ✓ Support for seamless roaming between access points. (draft 802.11r rev 8.0)
- ✓ Support for WPA/WPA2, Wi-Fi Protected Access.
- ✓ Multiple queue management in support of WMM QoS.
- ✓ WMM Power Save U-APSD
- ✓ Adaptive fallback rate algorithm that sets the optimum transmission rate based on actual signal-to-noise ratio and packet-loss information.

oWL API Features

- ✓ Easy to use, simple and practical
- ✓ Minimal Size, usable on highly resource constrained platforms.
- ✓ Portable, deployable on any platform with a standard C compiler
- ✓ OS independent, deployable on system using RTOS or even applications running without OS.
- ✓ Minimum code size and complexity.



H&D Wireless SW API:
wl_api is copyright under (o)WL[®]

Figure1: Wi-Fi driver from H&D Wireless is provided in a combination of source and binary code

- Blue blocks, Binary code
- Pink blocks, Source code



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oWL API



H&D Wireless provide a unique Software API (o)WL™ - a complete programming interface for embedded Wi-Fi applications

PERFORMANCE OF Wi-Fi

The WiFi solution HDG104 is best in class and a market leader in terms of solution size, power consumption in all modes, transmit/receive range, data transfer speed and cost.

TURNKEY SOLUTIONS

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

For more information on any of our products or services please visit us on the Web at:

www.hd-wireless.se

SERVICES AVAILABLE

Technical Support
Software and Setup
Hardware Support
Application Support
Customer application - development



H&D Wireless SW API:
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The quickest way to WiFi your product

The software API (o)WL® is an interface for any application that wants to use wireless for communication.

With a handful of commands for Library Management, IP-stack integration and WiFi Management it is quick and easy to integrate without need to be an expert on wireless communication.

Reference designs including HTTP Server are available
www.hd-wireless.se
<http://linux.hd-wireless.se>

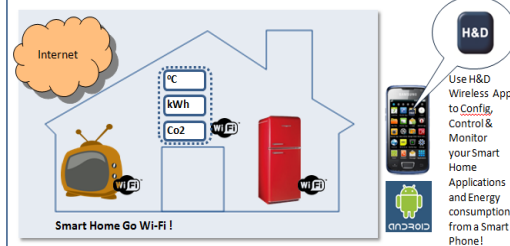
Most of "things" to be connected to the Internet use microcontrollers. The H&D Wi-Fi solution supported on Atmel MCU platforms will enable new applications with low design costs and quick TTM for Customers!

The DRF104 Software + Atmel AVR/ARM 32BIT MCU offers:

- Pre-tested
- Pre-calibrated
- Pre-certified (FCC, ETSI, WiFi)
- DRF104 SW is pre-integrated on AVR32/ARM platforms
- Dedicated Linux distribution site:
<http://linux.hd-wireless.se>



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



H&D Wireless AB is a Global Smart Home solution provider. We enable wireless sensor and multimedia data access to the Internet in an environmental friendly and cost effective way. The solutions are used in a wide range of applications ranging from M2M, smart energy meters for CleanTech to streaming data for Digital Media. The technology is world class Wi-

H&D Wireless AB

Partners include:

H&D Wireless AB: official Atmel® Corp. (NASDAQ: ATML) Wi-Fi partner.



H&D Wireless AB: Qualcomm
Atheros Authorized Design & Module Partner.



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