**Product Brief:**
**HDG104-WiFi 802.11b/g System in Package**

**Key Features Include:**
- Smallest Wi-Fi component in the market: 55mm²
- Lowest power consumption solution in the market for embedded applications.
- High RF output TX power (+17dBm) and RX sensitivity
- Supports multiple SW features including 802.11e/i (Security, Quality of Service)
- External discrete needed: 19 + antenna
- External chips: 40MHz (or from system)
- Pre-calibrated and programmed with MAC address
- No RF trimming needed
- 32KHz from host CPU

The HDG104 is a complete Wireless LAN System in Package (SiP) with ultra low power consumption and high supply voltage handling, optimized for embedded devices such as 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 HDG104 SiP format, with its complete system functionality, means quicker design cycles, lower risk and simplified manufacturing, all in a very small package (7.1 x 7.7 mm). Lack of external components simplifies assembly test and reduces yield loss. The HDG104 SiP delivers a complete and fully tested and trimmed implementation of 802.11b/g functionality.

The HDG104 is fully FCC and CE compliant, and is internally tested to meet FCC/CE and a FCC/CE approval. The HDG104 solution is pre-tested, calibrated and certified resulting in lowest possible production and system cost.
**HDG104 is prepared, fully Tested, Pre-certified Pre-Integrated on AVR32 MCU platform**

![Diagram: Wi-Fi HDG104 Typical Application](image)

**Most of “things” to be connected to Internet use Microcontrollers.**

The H&D WiFi solution supported on Atmel MCU platforms will enable New applications with low design costs and quick TTM for Customers!

The HDG104 Solution + Atmel AVR 32BIT MCU offers:

- Pre-tested
- Pre-calibrated
- Pre-certified (FCC,ETSI,WIFI)
- Pre-integrated onto Atmel MCU’s

### HDG104 WLAN 802.11b/g Performance data

<table>
<thead>
<tr>
<th>Mode</th>
<th>Output Power</th>
<th>Power Consumption</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX 802.11b</td>
<td>+17 dBm</td>
<td>725 mW</td>
<td>1, 2, 5, 5.5, 11 Mbit/s</td>
</tr>
<tr>
<td>TX 802.11g</td>
<td>+14 dBm</td>
<td>590 mW</td>
<td>6, 9, 12, 18, 24, 36, 48, 54 Mbit/s</td>
</tr>
<tr>
<td>RX 802.11b</td>
<td>N/A</td>
<td>220 mW</td>
<td></td>
</tr>
<tr>
<td>RX 802.11g</td>
<td>N/A</td>
<td>230 mV</td>
<td></td>
</tr>
<tr>
<td>Power Save</td>
<td>N/A</td>
<td>0.4 mW</td>
<td>Receive only, 2s RX beacons</td>
</tr>
<tr>
<td>Sleep</td>
<td>N/A</td>
<td>0.2 mW</td>
<td>No receive, FW loaded, only LFC running</td>
</tr>
<tr>
<td>Soft Shutdown</td>
<td>N/A</td>
<td>0.15 mW</td>
<td>No receive, No FW loaded, only LFC running</td>
</tr>
<tr>
<td>Shutdown</td>
<td>N/A</td>
<td>0.05 mW</td>
<td>No FW loaded, DVDD OFF.</td>
</tr>
</tbody>
</table>