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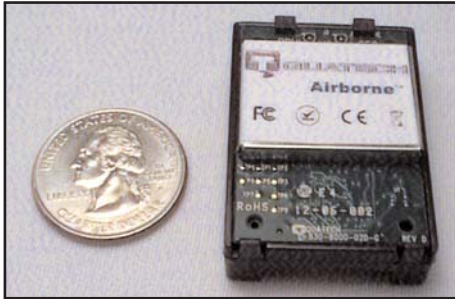
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## Airborne™ Embedded Wireless Device Server Module Serial to 802.11b/g Wireless LAN

WLNG-AN-DP100 series  
WLNG-SE-DP100 series

Preliminary



### High performance device networking solutions

Airborne™ is a line of highly integrated 802.11 radios and modules. The wireless device server module includes a radio, (which may be purchased separately) a base-band processor, an application processor and software for a “drop-in” web-enabled WiFi solution. Since there’s no need to develop the software, or to develop the RF and communications expertise in-house, OEMs can realize reduced product development costs and a quick time-to-market. Airborne™ modules provide instant LAN and Internet connectivity, and connect through standard serial interfaces (other Airborne modules offer an Ethernet interface) to a wide variety of applications.

### Highly interoperable with advanced security

The extremely small footprint design makes Airborne™ easy to embed into new or existing designs. The module is interoperable with industry standard 802.11 access points and advanced security standards such as WEP, WPA and LEAP, that provide a low cost infrastructure for connection to a LAN and to the Internet. The built-in TCP/IP stack and application software provide embedded devices with instant LAN and Internet connectivity without special programming of the module - only simple configuration is required using DPAC’s

HTML interface. An integrated web server makes it easy to remotely monitor and control any device using a standard browser. Additionally, the OEM can create custom web pages that deliver content from their application.

### Applications

The Airborne™ modules have been designed to provide wireless LAN and Internet connectivity in these industries:

- transportation
- medical
- warehouse and logistics
- point-of-sale (POS)
- industrial automation
- military
- scientific research

Equipment with an embedded Airborne™ module can be monitored and controlled by a handheld device, by a PC in a central location or over the Internet.

The Evaluation & Design Kit provides software and utilities that allow a developer to quickly and easily operate and evaluate the Wireless Device Server module.

### KEY FEATURES

- Extended operating temperature range (-40°C to +85°C) and environmental specifications
- Advanced security: WEP (64 & 128 bit), WPA and 802.1x (LEAP) authentication
- Low power modes
- Highly integrated 802.11b/g wireless module with radio, base-band & application processor
- Quick time to market & reduced development costs
- Configurable serial, digital & analog I/O ports
- Integrated RTOS, TCP/IP Stack and CLI
- FCC Part 15 Class B Sub C Modular Approval
- Reduces need for RF and communications expertise
- Five year warranty

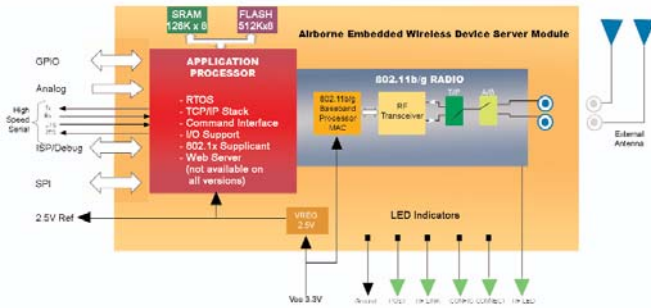
### Model Selection Guide

| Model No.   | Interface   |        |            |     |                      | WiFi      | Security           |     |       |
|---|---|--------|------------|-----|----------------------|-----------|--------------------|-----|-------|
|   | UART  | RS-232 | RS-422/485 | SPI | Digital & Analog I/O | 802.11b/g | WEP (64 & 128 bit) | WPA | LEAP* |
| WLNG-AN-DP101   | ●   | ●      |            |     | ●                    | ●         | ●                  | ●   | ●     |
| WLNG-AN-DP102   |   |        |            | ●   | ●                    | ●         | ●                  | ●   | ●     |
| WLNG-SE-DP101   | ●   | ●      | ●          |     |                      | ●         | ●                  | ●   |       |
| To evaluate all available features and receive evaluation tools, order below. |   |        |            |     |                      |           |                    |     |       |
| WLNG-EK-DP001   | Evaluation & Design Kit, includes Wireless Access Point         |        |            |     |                      |           |                    |     |       |
| WLNG-EK-DP003   | Evaluation & Design Kit, does not include Wireless Access Point |        |            |     |                      |           |                    |     |       |

All 802.11b/g products are RoHS-compliant.

\* feature supported in special firmware

## Block Diagram



## Specifications

|                                  |   |
|----------------------------------|---|
| Technology                       | IEEE 802.11b/g, WiFi compliant (802.11i, 802.11e, 802.11d capable)  |
| Frequency                        | 2.400 ~ 2.4835 GHz (US/Can/Europe)<br>2.471 ~ 2.497 GHz (Japan)   |
| Modulation Technology            | DSSS, CCK, OFDM   |
| Modulation Type                  | DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM   |
| Network Access Modes             | Ad-hoc, infrastructure  |
| Channels                         | USA/Canada: 11 channels (1 - 11)<br>Europe: 13 channels (1 - 13)<br>Japan: 14 channels (1 - 13 for g rates)<br>(1 - 14 for b rates)<br>France: 4 channels (10 - 13)   |
| Wireless Data Rate               | 802.11b - 11, 5.5, 2, 1 Mbps<br>802.11g - 54, 48, 36, 24, 18, 12, 9, 6 Mbps   |
| MAC                              | CSMA/CA with ACK, RTS, CTS  |
| RF Power                         | +19.3 dBm (typical) Approx. 85 mW peak for B rates<br>+15 dBm (typical) Approx. 32 mW average for B rates<br>+21.5 dBm (typical) Approx. 143 mW peak for G rates<br>+12 dBm (typical) Approx. 16 mW average for G rates |
| Sensitivity                      | -71dBm for 54Mbps<br>-77dBm for 36Mbps<br>-83dBm for 18 Mbps<br>-85dBm for 11Mbps<br>-87dBm for 1Mbps   |
| Protocols                        | TCP/IP, ARP, ICMP, DHCP, DNS, HTTP  |
| Data Transfer                    | UDAP Discovery<br>TCP/IP, HTTP, UDP   |
| Security                         | WEP 64 and 128bit (RC4), WPA (TKIP), 802.1x (EAP)   |
| Antenna                          | Two U.FL coaxial connectors, 50 ohms, supports receive diversity  |
| Supply                           | 3.3 Vdc +/-5%   |
| Current Consumption              | 575mA - transmit mode (typical)<br>375mA - receive mode (typical)<br>To be spec'd - power save mode (IEEE)<br>To be spec'd - (full power down)  |
| Power Up Inrush Current          | 3000 mA (max) 20ms  |
| Serial Interface Data Throughput | UART: to be specified<br>SPI: to be specified   |
| Digital I/O                      | Up to 8 digital I/O ports and status  |
| Analog Inputs                    | Up to 8 channels, 10-bit resolution, single ended, 0-2.5V   |
| Operating Temperature            | Temperature: -40°C - +85°C<br>Relative humidity: 5% - 95% (non-condensing)<br>Vibration: 20G peak-to-peak, 20 Hz-2KHz<br>Shock: 1500G, peak-to-peak, 0.5mS  |
| Connector                        | 36 Pin (Hirose DF12-36DS-0.5 V) 4-mm height   |
| Interface                        | CF+ via a 50pin Hirose 0.5mm pitch surface mount connector  |
| Agency Approvals                 | FCC Part 15 Class B Sub C Intentional Radiator<br>CE ETSI EN300 328, EN301 489, ETSI 60950-1<br>IC RSS210<br>RoHS and WEEE compliant  |

## Mechanical Outline

