DPAC TECHNOLOGIES

QUATECH

DEVICE NETWORKING - EMBEDDED PRODUCTS

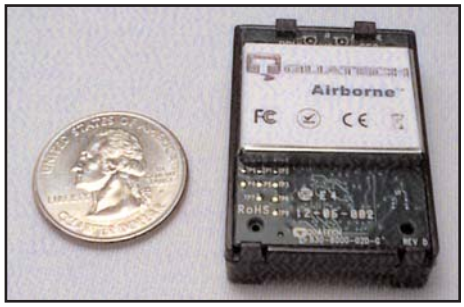
Airborne™ Embedded Wireless Device Server Module

Serial to 802.11b/g Wireless LAN

Preliminary

RoHS

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



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

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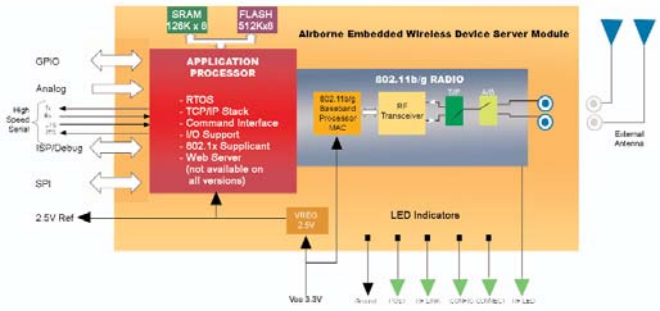
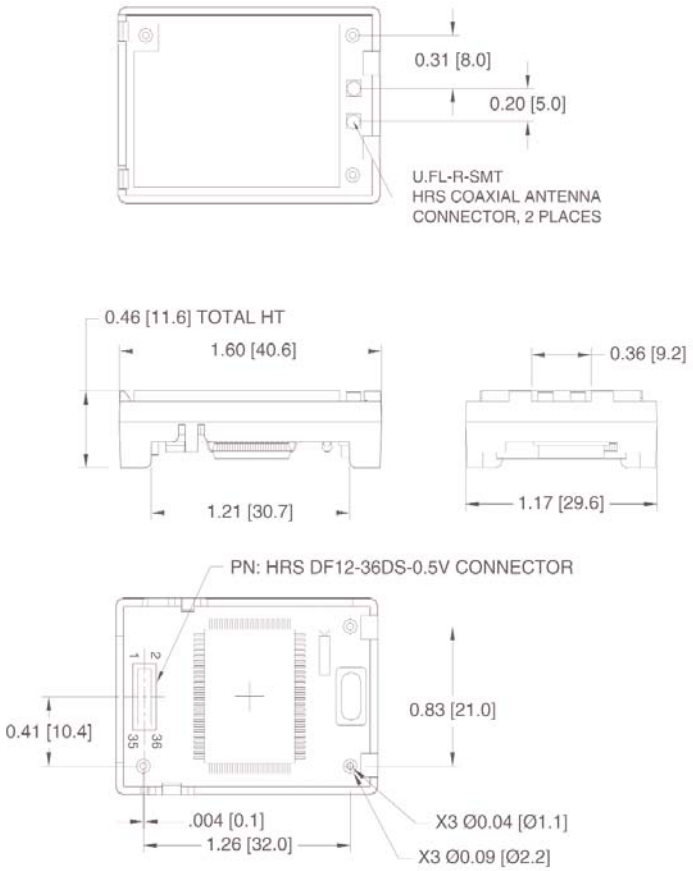
Block Diagram



Mechanical Outline



Specifications

Technology	IEEE 802.11b/g, WiFi compliant (802.11i, 802.11e, 802.11d capable)
Frequency	2.400 ~ 2.4835 GHz (US/Can/Europe) 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) Europe: 13 channels (1 - 13) Japan: 14 channels (1 - 13 for g rates) (1 - 14 for b rates) France: 4 channels (10 - 13)
Wireless Data Rate	802.11b - 11, 5.5, 2, 1 Mbps 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 +15 dBm (typical) Approx. 32 mW average for B rates +21.5 dBm (typical) Approx. 143 mW peak for G rates +12 dBm (typical) Approx. 16 mW average for G rates
Sensitivity	-71dBm for 54Mbps -77dBm for 36Mbps -83dBm for 18 Mbps -85dBm for 11Mbps -87dBm for 1Mbps
Protocols Data Transfer	TCP/IP, ARP, ICMP, DHCP, DNS, HTTP UDAP Discovery 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) 375mA - receive mode (typical) To be spec'd - power save mode (IEEE) To be spec'd - (full power down)
Power Up Inrush Current	3000 mA (max) 20ms
Serial Interface Data Throughput	UART: to be specified 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 Relative humidity: 5% - 95% (non-condensing) Vibration: 20G peak-to-peak, 20 Hz-2KHz 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 CE ETSI EN300 328, EN301 489, ETSI 60950-1 IC RSS210 RoHS and WEEE complaint

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