Airborne™ Embedded Radio Modules (802.11b/g)

WLRG-RA-DP100 series

High performance embedded device networking solutions

Airborne™ is a line of highly integrated 802.11 wireless modules. Airborne™ Embedded Radio Modules provide instant LAN and Internet connectivity, and connect through standard interfaces to a wide variety of applications. By contrast, the wireless device server and ethernet bridge modules include the radio as well as a base-band processor, an application processor and software for a "drop-in" web-enabled WiFi solution. With all the modules, there's no need to develop the software or the RF and communications expertise in-house, OEMs can realize reduced product development costs and a quick time-to-market.

Interoperable with advanced security

The extremely small footprint design makes Airborne™ easy to embed into new or existing designs. The radio integrates the 802.11 standards including the 802.11i security standard. The radio includes a full implementation of AES/CCMP, WPA and WEP security mechanisms. Enterprise applications are enabled by support for EAP. Additionally, the radio supports the 802.11e Quality of Service (QOS) and 802.11h Transmit Power Control (TPC) standards. Allowing you access to the latest functionality and maximizing interoperability with existing infrastructure.

Applications

The Airborne™ Embedded Radio 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 Airborne™ Embedded Radio 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 radio module in a Wireless Device Server module or Wireless Ethernet Bridge module.

KEY FEATURES

- Extended operating temperature range (-40°C to +85°C) and environmental specifications
- Advanced Security Support for 802.11i through integrated AES/CCMP, WPA, TKIP, WEP
- Low power modes

- Quick time to market & reduced development costs
- FCC Part 15 Class B Sub C Modular Approval
- Reduces need for RF and communications expertise
- CF interface using high density SMT connector
- Support for antenna diversity
- Device drivers available for a range of embedded OS's
- RoHS compliant
- Five year warranty

Model Selection Guide

Model No.	WiFi		Interface	Security				RoHS Compliant
	802.11b	802.11b/g	CompactFlash	WEP (64 & 128 bit)	WPA	AES/CCMP	EAP	
WLRG-RA-DP101		●	●	●	●	●		●
Also available								
To evaluate all available features and receive evaluation tools, order below.								
WLEG-RA-DP101	*Evaluation & Design Kit, b/g radio only*							

For information about Airborne Modules and Evaluation Kits, please call or go to www.quatech.com

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, 12, 9, 6 Mbps
MAC	CSMA/CA with ACK, RTS, CTS
RF Power	+19.3 dBm peak (85mW) at 802.11b data rates +15 dBm average (32mW) at 802.11b data rates +21.5 dBm peak (141mW) at 802.11g data rates +12 dBm average (16mW) 802.11g data rates
Sensitivity	-71dBm for 54Mbps -77dBm for 36Mbps -83dBm for 18 Mbps -85dBm for 11Mbps -87dBm for 1Mbps
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	475mA - transmit mode (typical) 275mA - receive mode (typical) To be spec'd - power save mode (IEEE) 5 mA sleep mode (full power down)
Power Up Inrush Current	3000 mA (max) 20ms
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	50 Pin (P/N: Hirose DF12-50DS-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 compliant