

## Airborne™ Enterprise Class Wireless Device Server

Serial to 802.11b/g & SPI to 802.11b/g

WLNG-SE-DP501 & WLNG-SP-DP501



Airborne™ is a line of highly integrated 802.11 radios and device servers, designed to address the demands of complex machine-to-machine (M2M) applications. Utilizing the latest 802.11 microprocessor and network technologies, the Airborne family of products provide a broad encompassing solution for wireless applications.

The Airborne Wireless Device Server family includes hardware and software necessary to connect a serial or Ethernet device to a high performance 802.11 network. The WLNG-SE-DP501 and WLNG-SP-DP501 includes a full featured 802.11b/g radio and a high performance 32bit ARM9 microprocessor running an embedded RTOS. The module also incorporates Quatech's exclusive Airborne Device Server firmware, which can network-enable virtually any OEM product.

### Enterprise Class Security

WPA2-Enterprise is the leading wireless security standard for enterprise networks and is fully supported by the Airborne Enterprise products. The integrated supplicant supports a wide range of EAP processes including:

- EAP-TLS/MSCHAPv2
- EAP-TLS/MD5
- EAP-TTLS/MSCHAPv2
- PEAPv0/MSCHAPv2
- LEAP

Airborne supports the most flexible certificate delivery and management available in the embedded device market, along with WEP, WPA, WPA2, 802.11i and Pre-shared Key (PSK), no other wireless solution provides a more comprehensive security solution.

### Reliability

Designed by Quatech specifically to meet the demands of the industrial, automotive and medical markets, the Airborne device server has the widest operating temperature range and highest level of reliability available, all backed by a five year limited warranty. Quatech also provides FCC Modular certification, minimizing requirements for further regulatory testing by original equipment manufacturers.

### Applications

Previous generations of Airborne Serial Device Servers have been integrated and deployed into a wide range of applications across various industries including:

- Medical equipment
- Vehicle telematics & diagnostics
- Material handling & logistics
- Industrial Automation
- Test & measurement
- Security & access control

Quatech's Airborne Wireless Serial Device Server Module extends the reputation of technologies implemented in the Quatech the family further by drawing on experience of Quatech application engineers across hundreds of wireless M2M deployments.

### KEY FEATURES

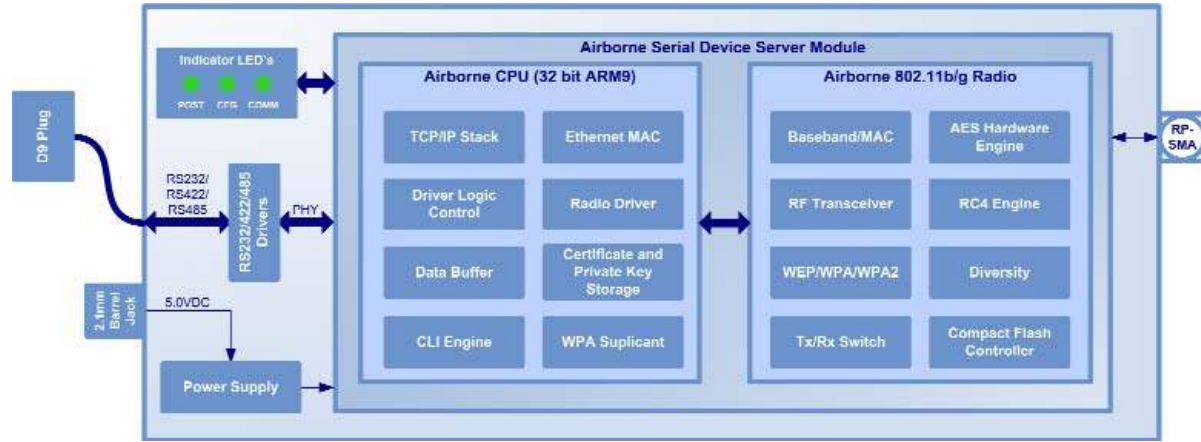
- 802.11b/g WiFi Radio with 32bit ARM9 CPU
- Enterprise Class wireless security (WPA2-Enterprise, WPA2-PSK, WPA-PSK, WEP, EAP) with Certificates
- Extended Operating Temperature Range (-40°C to +85°C) and environmental specifications
- Advanced Low Power Modes
- RS-232/422/485 interface
- Configurable wireless and wired interfaces
- Removes need for RF, networking and communications expertise
- Quick time to market and reduced integration costs
- Worldwide Certification Support- FCC Part 15 Class B Sub C Modular Approval, IOC, CE, ETSI, ROHS, WEEE
- Upgradable Airborne Device Server Firmware
- 5 year limited warranty

The advanced Enterprise 802.11 Serial Device Server provide an industry-leading solution with breakthrough performance and security for M2M applications and drop in replacements for existing 802.11b and 802.11g networking modules.

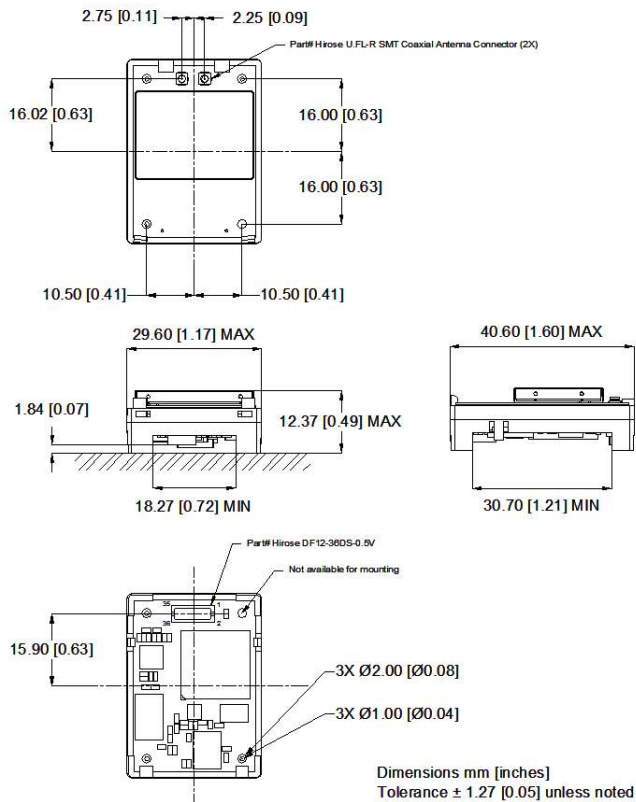
### Model Selection Guide

Model #	Description	WiFi		Interface					Security			
		802.11b/g	UART	RS232	RS422/485	SPI	Ethernet	GPIO	WEP	WPA	WPA2	EAP
WLNG-SE-DP501	802.11b/g, UART with RS-232/422/485 driver control	■	■	■	■			■	■	■	■	■
WLNG-SP-DP501	802.11b/g, SPI interface	■				■		■	■	■	■	■
<i>To evaluate all available features and receive evaluation tools, order below.</i>												
WLNG-EK-DP501	802.11b/g Enterprise Class Device Server Module Eval Kit, UART (RS-232/422/485) to 802.11b/g Serial Module											
WLNG-EK-DP502	802.11b/g Enterprise Class Device Server Module Kit, SPI to 802.11b/g											

# Block Diagram



## Mechanical Outline



## Specifications

Technology	IEEE 802.11b/g, WiFi compliant
Frequency	2.4 ~ 2.4835 GHz (US/Canada/Europe) 2.4 ~ 2.497 GHz (Japan)
Modulation Technology	DSSS, CCK, OFDM
Modulation Type	DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM
Network Access Modes	Infrastructure, Ad Hoc
Channels	USA/Canada: 11 channels Europe: 13 channels France: 4 channels Japan: 14 channels (13 channels for 802.11g)
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
Network Protocols	TCP/IP, ARP, ICMP, DHCP, DNS, UDAP, TFTP, UDP, PING, HTTP
Receive Sensitivity	54Mb/s = -69dBm 6Mb/s = -86dBm 1Mb/s = -86dBm
Security Protocols	Disabled: WEP 64 & 128bit, WPA (TKIP), WPA (AES), WPA2 (AES), 802.1x (EAP) Supplicant Supports WPA & WPA2 Enterprise supplicants EAP-TLS/MSCHAPV2, EAP-TTLS/MSCHAPv2, EAP-TTLS(MD5), EAP-PEAPv0/MSCHAPv2, LEAP Zero host security footprint Supports Certificate, delivery and management
Antenna	Two (2) U.FL coaxial connectors, 50 ohms, supports diversity
Supply	3.3VDC +/-5%, 850mA (MAX)
Supply In-rush Current	3000mA (MAX) for 20ms
DC Characteristics	Operating Current (Tx, 802.11g) = 620mA Typ. Operating Current (Rx, 802.11g) = 420mA Typ. Power Save (Doze) = 10mA Typ. Power Down (Sleep) = 1mA Typ.
Environmental	Operating Temperature: -40°C - +85°C, Storage: -55°C - +150°C Relative Humidity: 5% - 95% (non-condensing) Vibration: 20G peak-to-peak, 20Hz-2KHz swept Shock: 1500G peak-to-peak, 0.5mS duration
Interface	RS232, RS422, RS485, SPI
Digital I/O	8 GPIO
LED Indicators	4 indicator LED signals (RF_ACT, POST, CONNECT, RF_LINK)
Connector	36 pin High Density SMT connector from Hirose (DF12-36DS-0.5V), 4mm Height
Agency Approvals	Worldwide Certification Support- FCC Part 15 Class B Sub C Modular Approval, IOC, CE, ETSI, ROHS, WEEE