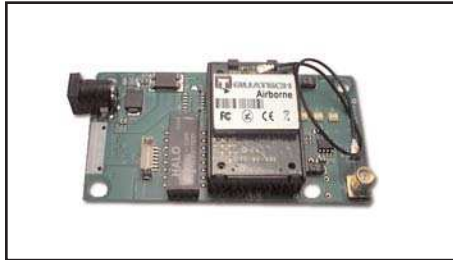# Airborne Embedded Wireless Serial Device Server Board
Serial to 802.11b/g Wireless LAN

ABDG-SE-DP5xx Series

Airborne is a family of fully integrated 802.11 wireless device server and ethernet bridge products designed to provide wireless LAN and Internet connectivity to transportation, medical, warehouse logistics, POS, industrial, military and scientific applications.

The Airborne Device Server family allows an Serial device to connect to a high performance wireless 802.11 network. The integrated Network Address Translation (NAT) functionality provides plug and play connectivity and simple integration to any system with a serial port. The Airborne Serial Device Server Boards includes a full featured 802.11b/g radio and a high performance ARM9 MCU running embedded Linux.

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 Embedded Device Server Board 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 Embedded 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 Enterprise Device Server Module extends the reputation of the family further by drawing on experience of Quatech application engineers across hundreds of wireless M2M deployments.

The advanced technologies implemented in the Quatech Enterprise 802.11 Device Server provide an industry-leading solution with breakthrough performance and security for M2M applications and drop in replacements for existing 802.11b and 802.11b/g networking bridge boards.

KEY FEATURES

- Extended operating temperatures (-20° to +85°C) and environmental specifications
- Plug-n-Play Serial to 802.11 Connectivity
- Enterprise Class wireless security (WPA2-Enterprise, WPA2-PSK, WPA-PSK, WEP, EAP) with Certificates
- Plug-and-Play LAN and Internet Connectivity
- Integrated RP-SMA Connector
- Software-Configurable 802.11b/g Interface
- Advanced utilities for discovery, configuration and management of Airborne Wireless Serial Device Server
- 3 Status indicator lights
- Integrated RP-SMA Connector
- On board power supply
- Worldwide Certification Support-FCC Part 15 Class B Sub C Modular Approval, IOC, CE, ETSI, ROHS, WEEE
- 5 year warranty

Model Selection Guide

Model No.	Interface			WiFi	Security			
	RS-232	RS-232/422/485	Power over Serial	802.11b/g	WEP (64 & 128bit)	WPA	WPA2	EAP
ABDG-SE-DP553		■		■	■	■	■	■
ABDG-SE-DP556	■			■	■	■	■	■
ABDG-SE-DP559	■		■	■	■	■	■	■
ABDG-SE-DP503		■		■	■	■	■	■
ABDG-SE-DP506	■			■	■	■	■	■
ABDG-SE-DP509	■		■	■	■	■	■	■

Block Diagram
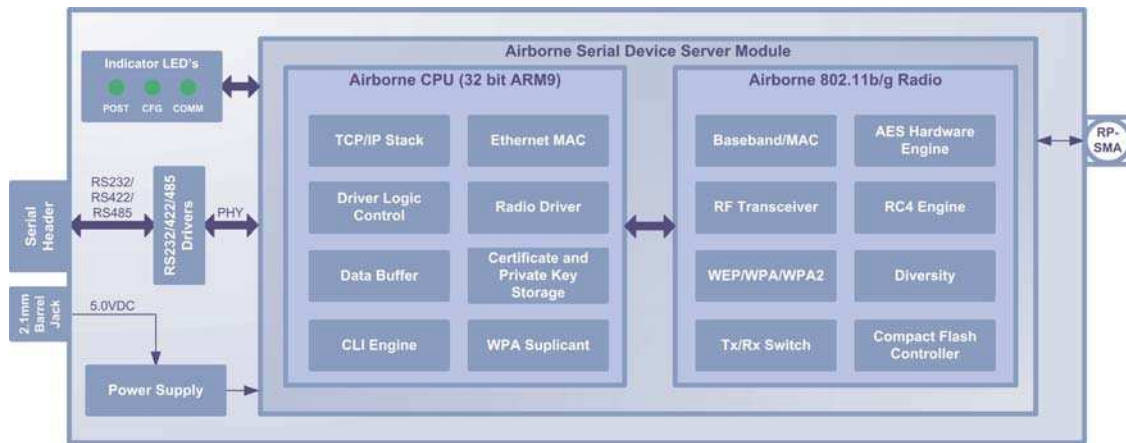
Package Contents

Model No.	Package Includes:
ABDG-SE-DP503 ABDG-SE-DP506 ABDG-SE-DP509	Airborne Wireless Device Server Board

Specifications

Technology	IEEE 802.11b/g, WiFi compliant
Wired Interface	RS-232, RS-422, RS-485
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, DHS, UDAP, TFTP, UDP, PING
Receive Sensitivity	54Mb/s = -69dBm 6 Mb/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	Integrated RP-SMA Connector
Supply	5.0VDC+/-5%, 500mA
Supply In-rush Current	3000mA (MAX) for 20ms
DC Characteristics	Operating Current (Tx, 802.11g) = 500mA Typ. Operating Current (Rx, 802.11g) = 530mA Typ. Power Save (Snooze) = 10mA Typ. Power Down (Sleep) = 1mA Typ.
Environmental	Operating Temperature: -20°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
LED Indicators	3 Indicator LED (POST, LINK, COMM)
Dimensions (without mounting bracket)	89.7mm L x 46.3mm W x 14.5mm T (3.53 in. x 1.82 in. x 0.57 in.)
Agency Approvals	Worldwide Certificate Support- FCC Part 15 Class B Sub C Modular Approval, IOC, CE, ETSI, ROHS, WEEE

Mechanical Outline

![B&B electronics MANUFACTURING COMPANY]

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