Airborne Embedded Wireless Ethernet Bridge Board

Ethernet to 802.11b/g Wireless LAN

ABDG-ET-DP503

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 requiring performance, reliability and advanced security.

The Airborne Ethernet Bridge family allows an Ethernet enabled 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 an Ethernet port. The Ethernet interface supports auto rate detection up to 100Mb/s. The ABDG-ET-DP503 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 Ethernet Bridge 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 Ethernet Bridges 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 Ethernet Bridge Module extends the reputation of the family further by drawing on experience of Quatech application engineers across hundreds of wireless M2M deployments.

KEY FEATURES

- Extended operating temperatures (-40° to +85°C) and environmental specifications
- Plug-n-Play Ethernet 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
- Integrated Ethernet Magnetics & Header
- Software-Configurable 802.11b/g Interface
- Advanced utilities for discovery, configuration and management of Airborne Ethernet device
- 3 Status indicator lights
- On board power supply
- Worldwide Certification Support- FCC Part 15 Class B Sub C Modular Approval, IOC, CE, ETSI, ROHS, WEEE
- 5 year warranty

The advanced technologies implemented in the Quatech Enterprise 802.11 Ethernet Bridge 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.

Model Selection Guide

	Interface	***WiFi***	***Security***				
Model No.	10/100 Ethernet interface	802.11b/g	WEP (64 & 128 bit)	WPA	WPA2	LEAP	EAP
ABDG-ET-DP503	■	■	■	■	■	■	■

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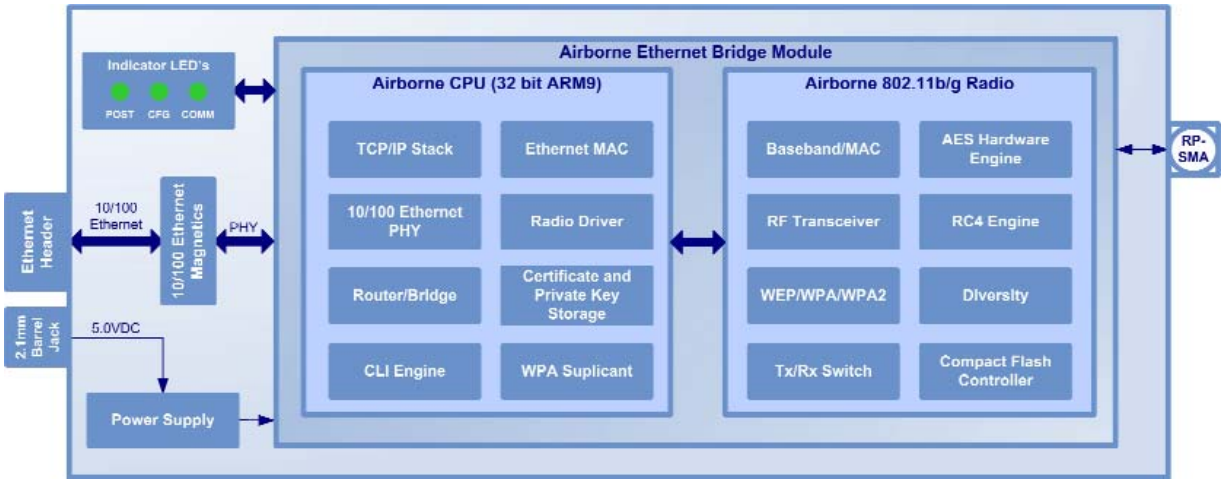
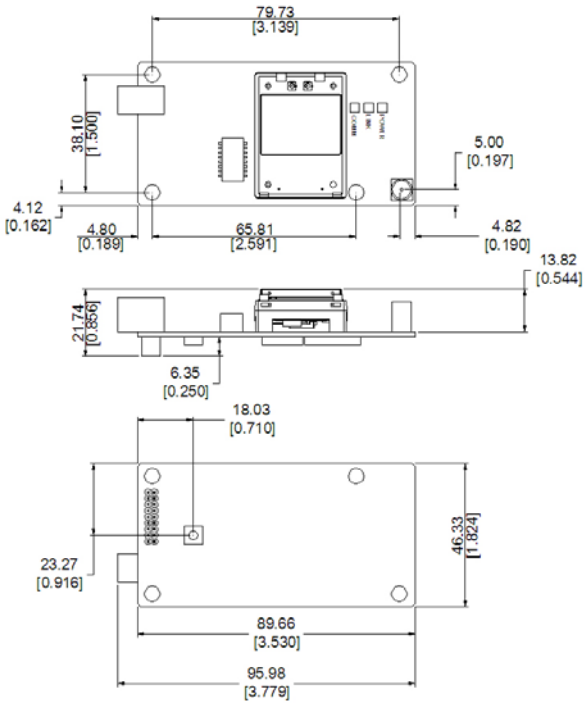
Block Diagram



Package Contents

Model Number	Package Includes:
ABDG-ET-DP503	Airborne Wireless Ethernet Bridge Board
Available Seperately	
ACH0-CA-DP003	Ethernet Cable with RJ45 (Male) Connector
ACH2-AT-DP002	Antenna, Omni 2dBi, RP-SMA

Mechanical Outline



Specifications

Technology	IEEE 802.11b/g, WiFi compliant
Wired Interface	10/100 Ethernet (auto sense), RJ-45 Plug
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: -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
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

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