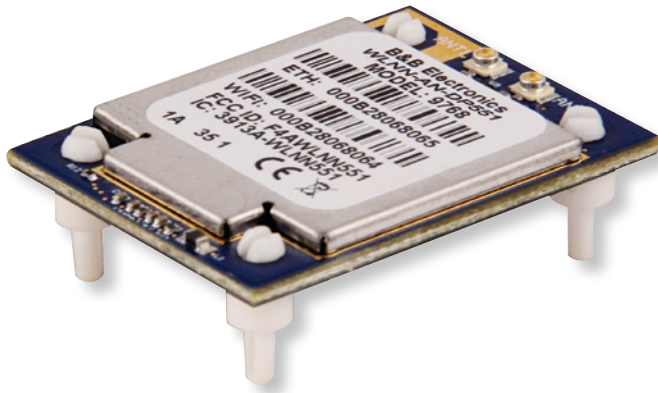# Secure, Rugged Wi-Fi Modules

WLNN-xx-DP551 Series

PRODUCT FEATURES

- Quick time to market and reduced integration costs
- 802.11a/b/g/n Wi-Fi (2.4 GHz, 5 GHz)
- Airborne PowerSave firmware reduces power consumption and extends battery life in mobile devices
- Extended Operating Temperature Range (-40°C to +85°C) and environmental specifications
- AirborneM2M SpeedLink roaming provides enhanced connection reliability
- Advanced Enterprise Class wireless security
- AirborneM2M PortFlex capability enables any combination of comm ports (UART, SPI, GPIO, Ethernet and 802.11 interfaces)
- FCC Part 15 Class B Sub C Modular Approval minimizes regulatory requirements
- Backwards compatible with previous generations of AirborneM2M embedded modules

AIRBORNEM2M™ EMBEDDED DUAL BAND WIRELESS DEVICE SERVER AND ETHERNET SOLUTION MODULES SERIAL & ETHERNET TO 802.11A/B/G/N (2.4 GHz, 5 GHz)

The AirborneM2M line of highly-integrated 802.11 wireless modules allow OEMs to Wi-Fi enable devices used in an array of machine-to-machine (M2M) applications. B&B delivers all of the necessary RF technology, networking stacks and advanced security features in a compact, single-board package, reducing integration costs for OEMs and providing for a quick time to market.

Big Performance in Small and Ruggedized Package

The AirborneM2M series delivers the industry's most rugged, highly-integrated, embedded Wi-Fi module solution. AirborneM2M modules meet extended operating temperature and shock/vibration specifications of the most demanding M2M applications.

Utilizing a 32bit ARM9 processor and the high-performance Atheros AR6203 802.11 radio, the new AirborneM2M modules deliver increased transmit power and receive sensitivity, contributing to superior range performance.

SpeedLink™ Roaming

The new AirborneM2M SpeedLink roaming feature provides enhanced connection reliability, enabling OEM devices to roam freely within a wireless network without loss of data or connection.

Flexible & Easy to Integrate

AirborneM2M incorporates support for both serial and Ethernet to Wi-Fi 802.11 2.4 or 5 GHz communications. Utilizing AirborneM2M PortFlex capability, OEMs may configure via software any combination of UART, SPI, Ethernet, GPIO and 802.11 interfaces. Each individual port can be independently configured.

The AirborneM2M modules are footprint and pin-compatible with their predecessors. Our commitment to maintaining hardware and software compatibility assures OEMs of a simple, future-proof migration path even as wireless technology evolves.

Enterprise Class Security

Security protocols are important to mission-critical wireless M2M applications. AirborneM2M multi-layered security approach addresses the requirements of Enterprise-class networks and corporate IT departments. These advanced security features include wireless security (801.11i/WPA2 Enterprise); network security (EAP authentication and certificate support); communication security (SSH functuionality and fully encrypted data tunnels); and device security (multi-level encryption capability to protect configuration data.)

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
WLNN-ER-DP551	802.11a/b/g/n, 10/100 Ethernet adapter, Advanced Enterprise Security
WLNN-AN-DP551	802.11a/b/g/n, UART interface, Advanced Enterprise Security
WLNN-SE-DP551	802.11a/b/g/n, UART with RS-232/422/485 Driver Control, Advanced Enterprise Security
WLNN-SP-DP551	802.11a/b/g/n, SPI interface, Advanced Enterprise Security
WLNN-EK-DP551	Design and Development Kit

World-wide.
Check with your local distributor for availability and options.

ACCESSORIES

ACH2-DBAT-DP002 - 2 dBi portable (Rubber duck) 2.4/5 GHz antenna

ACH2-DBAT-DP003 - 3.8/5.5 dBi portable (Rubber duck) 2.4 GHz, 5 GHz antenna

SPECIFICATIONS

TECHNOLOGY

Technology	IEEE 802.11a/b/g/n, Wi-Fi compliant
Frequency	2.4 ~ 2.4835 GHz (US/Canada/Europe) 5.150 ~ 5.350 GHz 5.725 ~ 5.825 GHz
Modulation Technology	DSSS, CCK, OFDM
Modulation Type	DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM
Network Access Modes	Infrastructure (Client), Ad Hoc
Channels	US/Canada: 11 Channels 802.11b/g 13 Channels 802.11a Europe: 13 Channels 802.11b/g 19 Channels 802.11a France: 4 Channels 802.11b/g Japan: 14 Channels 802.11b 13 Channels 802.11g 23 Channels 802.11a
Wireless Data Rate	802.11b:11, 5.5, 2, 1 Mbps 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: 65, 58.5, 42, 39, 26, 19.5, 13, 6.5 Mbps
MAC	CSMA/CA with ACK, RTS, CTS
Network Protocols	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING
Receive Sensitivity 802.11 b/g	54Mb/s = -72 dBm 36Mb/s = -78 dBm 18Mb/s = -84 dBm 6Mb/s = -89 dBm 11Mb/s = -86 dBm 1Mb/s = -92 dBm
Receive Sensitivity 802.11 a	54Mb/s = -74 dBm 36Mb/s = -80 dBm 18Mb/s = -86 dBm 6Mb/s = -90 dBm

Transmit Power 802.11a/b/g	802.11b 15 dBm 802.11g 12.6 dBm 802.11a 17 dBm
Security Protocols (Client mode)	Disabled, WEP 64 & 128bit, WPA (TKIP), WPA (AES), WPA2 (AES), 802.1x (EAP) Supplicant 802.11I, WPA & WPA2 Enterprise supplicants (EAP-TLS, EAP-TTLS(MSCHAPv2), EAPTTLS(MDS5), EAP-PEAPv0(MSCHAPv2, LEAP), EAP-FAST, LEAP) Supports Certificates and Private Key Upload and Storage (Multiple)
Antenna	Two (2) U.FL coaxial connectors, 50 Ohms Max gain @ 5 GHz = 5.5 dBi Max gain @ 2.4 GHz = 4.1 dBi
Supply	3.3VDC +/-5%, 650 mA (MAX)
Supply In-rush Current	1500mA (MAX) for 400us
DC Characteristics	Operating Current (Tx, 802.11g) = 370mA Typ. Operating Current (Rx, 802.11g) = 200mA Typ.
Environmental	Operating Temperature: -40° to +85°C Storage Temperature: -40° to +85°C Relative humidity: 5% - 95% (non-condensing) Vibration: 20G peak-to-peak, 20Hz-2KHz swept Shock: 1500G peak-to-peak, 0.5mS duration
Interfaces	Dual UART (960KBAUD), RS232/ 422/ 485, SPI (1bit/8MHz), 10/100 Ethernet, PortFlex
Digital I/O	8 GPIO
LED Indicators	4 indicator LED signals (RF ACT, POST, CONNECT, RF LINK), Signal Strength
Connector	36 pin High Density SMT connector from Hirose (DF12-36DS-0.5V), 4mm Height
Agency Approvals	North America: FCC Title 47 Part 15 Class B Sub C Intentional Radiator, IOC RSS210 Europe: CE ETSI EN300 328 RoHS & WEEE compliant

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