WLNNA Series Evaluation Kit

– Design & Development

BB-WLNNA-EK-DP551

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PRODUCT FEATURES

- Observe, configure, test and evaluate WLNNA Series modules
- Access all of the module's interfaces
- Change device function personality for application – router, bridge, access point, serial device server, UART, SPI and more
- Wi-Fi (2.4 GHz, 5 GHz)
- RS-232/422/485 serial and 10/100 Ethernet
- Web interface access for status, configuration and meaintenance
- LED indicators for feedback and debugging
- 5 VDC power supply (included) or battery option (batteries not included)
- IEEE 802.11a/b/g/n compliant

OVERVIEW

The WLNNA Series Device Server Module Evaluation Kit is an evaluation, testing and development platform for Airborne Enterprise Device Server Modules. The WLNNA Series module offers significant advantages over other wireless solutions in terms of size, cost, power consumption and performance. The module is ideal for applications that require a rugged and reliable, embedded IEEE 802.11a/b/g/n compliant wireless engine.

The evaluation kit is a complete package powered by the WLNNA Series module. It includes an WLNNA Series Evaluation Board that contains the WLNNA Series module along with connectors and headers providing access to all of the module's interfaces.

The WLNNA Series Evaluation Board is a versatile, full-featured tool incorporating all the circuitry, interfaces, push-buttons and LEDs required to observe and evaluate the WLNNA Series module. The portability of the WLNNA Series Evaluation Board allows it to be used in variety of locations and conditions.

ORDERING INFORMATION

MODEL NUMBER	DESCRIPTION
BB-WLNNA-EK-DP551	Evaluation, Design & Development Kit – 802.11a/b/g/n, Advanced Enterprise Class Security

Kit Contents:

(1) Airborne Enterprise Module Evaluation Circuit Board Assembly ("EVB")
(1) Airborne BB-WLNNA-EK-DP551 module (mounted to EVB)
(1) 5VDC power supply, 2.1mm barrel jack, cable
(2) 2dBi, 2.4GHz/5GHz, 50 Ohm, omni-directional antenna
(1) DB9/DB9 serial cable (null modem)
(1) USB to serial adapter (Model# BB-232USB9M-LS)
(1) Cat5 Ethernet cable
(1) Quick Start Guide

Optional battery powering: (4) AA 1.5V batteries required, not included.

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SPECIFICATIONS – *MODULES ONLY*

TECHNOLOGY		
Technology	IEEE 802.11a/b/g/n, Wi-Fi Compliant	
Frequency	2.412 ~ 2.472 GHz (US/Canada/Europe) 5.180 ~ 5.320 GHz 5.500 ~ 5.700 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	
Maximum Output Power (EIRP)	2412-2472 MHz 19.20 dBm 5180-5320 MHz 17.15 dBm 5500-5700 MHz 18.28 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 Maximum Gain @ 5 GHz = 5.5 dBi Maximum Gain @ 2.4 GHz = 4.1 dBi	
Supply	3.3 VDC +/-5%, 650 mA (maximum)	
Supply In-rush Current	1500 mA (maximum) for 400us	
DC Characteristics	Operating Current (Tx, 802.11g) = 370 mA (typical) Operating Current (Rx, 802.11g) = 200 mA (typical)	
Environmental	Operating Temperature: -40 to +85 °C Storage Temperature: -40 to +85 °C Relative Humidity: 5 to 95%, non-condensing	
Interfaces	Dual UART (960K baud), RS-232/422/485, SPI (1-bit/8 MHz), 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	

MEANTIME BETWEEN FAILURES (MTBF)	
MTBF	524380 hours (all BB-WLNNA-xx-DP551 modules)
MTBF Calc. Method	MIL 217F (Parts Count Reliability Prediction)
REGULATORY	
North America	FCC Title 47 Part 15 Class B Sub C Intentional Radiator
CE - Directives (Europe)	2014/35/EU - Low Voltage Directive (LVD) 2011/65/EU - amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS) 2012/19/EU - Waste Electrical & Electronic Equipment Directive (WEEE) 2014/53/EU - Radio Equipment Directive (RED) Hereby, Advantech B+B declares that the radio equipment type Wi-Fi module is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: *www.advantech-bb.com*

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