## AirborneM2M<sup>™</sup> Evaluation Kit

Design & Development

**BB-WLNN-EK-DP551** 

# **AD\ANTECH**



#### **PRODUCT FEATURES**

- Observe, configure, test and evaluate AirborneM2M 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 AirborneM2M Enterprise Class Device Server Module Evaluation Kit is an evaluation, testing and development platform for Airborne Enterprise Device Server Modules. The AirborneM2M 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 AirborneM2M module. It includes an AirborneM2M Evaluation Board that contains the AirborneM2M module along with connectors and headers providing access to all of the module's interfaces.

The AirborneM2M Evaluation Board is a versatile, full-featured tool incorporating all the circuitry, interfaces, push-buttons and LEDs required to observe and evaluate the AirborneM2M module. The portability of the AirborneM2M Evaluation Board allows it to be used in variety of locations and conditions.

#### **ORDERING INFORMATION**

MODEL NUMBER	DESCRIPTION
BB-WLNN-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 WLNN-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.

All product specifications are subject to change without notice. WLNN-EK-DP551\_EvaluationKit\_4820ds



## **Airborne Evaluation Kit**

Design & Development
 BB-WLNN-EK-DP551



### SPECIFICATIONS - MODULES ONLY

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TECHNOLOGY	IEEE 000 44	h/a/n Wi Ei Compliant			
Technology		a/b/g/n, Wi-Fi Compliant			
Frequency	2.412 ~ 2.472 5.180 ~ 5.320	2 GHz (US/Canada/Europe)			
riequency	5.500 ~ 5.700				
Modulation Technology	DSSS, CCK, OFDM				
Modulation Type	, ,	PSK, CCK, BPSK, QPSK, 16QAM, 64QAM			
Network Access Modes					
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			
	oapain	13 Channels 802.11g			
		23 Channels 802.11a			
	802 11b 11 5	5.5, 2, 1 Mbps			
Wireless Data Rate	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 wit	th ACK, RTS, CTS			
Network Protocols	, ,	ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING			
	54Mb/s = -72 dBm				
Receive Sensitivity - 802.11 b/g	36Mb/s = -78 dBm				
	18Mb/s = -84 dBm 6Mb/s = -89 dBm				
	11Mb/s = -86				
	1Mb/s = -92				
Receive Sensitivity - 802.11 a	54Mb/s = -74 dBm				
	36Mb/s = -80 dBm				
	18Mb/s = -86 dBm 6Mb/s = -90 dBm				
	802.11b = 15				
Transmit Power	802.11g = 12.6 dBm				
- 802.11a/b/g	802.11a = 17 dBm				
Maximum Output Power (EIRP)		1Hz 19.20 dBm			
	5180-5320 MHz 17.15 dBm 5500-5700 MHz 18.28 dBm				
		EP 64 & 128bit, WPA (TKIP), WPA (AES), WPA2			
Security Protocols - client mode		x (EAP) Supplicant 802.111, 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)	minicates and Private Key Opioad and Storage			
		Coaxial Connectors, 50 Ohms			
Antenna	Maximum Ga	ain @ 5 GHz = 5.5 dBi			
	Maximum Gain $@$ 2.4 GHz = 4.1 dBi				
Supply		%, 650 mA (maximum)			
Supply In-rush Current		aximum) for 400us			
DC Characteristics		urrent (Tx, 802.11g) = 370 mA (typical)			
		urrent (Rx, 802.11g) = 200 mA (typical) mperature: -40 to +85 °C			
Environmental	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),			
		net, PortFlex			
Digital I/O	8 GPIO				
LED Indicators	4 Indicator LI	ED Signals (RF ACT, POST, CONNECT, RF LINK);			
	Signal Streng	gth Density SMT connector from Hirose			
Connector		-0.5V), 4mm Height			
	.22 0000	,,			

MEANTIME BETWEEN FAILURES (MTBF)		
MTBF	524380 hours (all BB-WLNN-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)	<ul> <li>2014/35/EU - Low Voltage Directive (LVD)</li> <li>2011/65/EU - amended by (EU) 2015/863 Reduction of Hazardous Substances Directive (RoHS)</li> <li>2012/19/EU - Waste Electrical &amp; Electronic Equipment Directive (WEEE)</li> <li>2014/53/EU - Radio Equipment Directive (RED)</li> <li>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</li> </ul>	

