

## SELECTING A DUAL-BAND WI-FI NETWORK PRODUCT FOR YOUR NEXT PROJECT

Use the selection table on pages 2 to help narrow your search for a Wi-Fi networking device that best suits your application. Below are a few helpful questions to ask at the beginning of the project:

### ■ What TYPE of device do you need?

- Access Point – connects to network via Ethernet cable and creates wireless coverage to add wireless devices/clients to the network. ("wireless hub"). Supports up to 8 clients per access point.
- Bridge – connects separate networks, or devices on separate networks, as needed, via MAC address.
- Router – routes data traffic between two or more LAN/WAN networks via SW-configured address.
- Serial Device Server – routes serial RS-232/422/485 devices and data to Ethernet.
- OEM Module Form – open board design with same functionality as enclosed units, with quick time to market and reduced integration costs.

### ■ What type of devices are you connecting?

- Serial RS-232/422/485?
- Ethernet?
- Indoor and outdoor radios with the same signal frequency can be used together.

### ■ Are there environmental considerations for your application?

- Industrial models feature a rugged metal enclosure with panel mounting (DIN rail optional), expanded wide operating temperature range.
- Enterprise models feature a nylon, desktop enclosure with a narrower operating temperature range.
- Open board models support the same industrial or enterprise features but allow convenient OEM applications: space is at a premium, enclosure not required, or integration into other assemblies.

### ■ Once you have a product selected, you should ask a few more questions.

- Do you have all the accessories to make all connections? Spare antenna, power supply, alternative mounting adapters, etc.
- Advantech B+B offers a design/development kit for quick time-to-market and reduced integration cost.
- When do you need product samples for proof of concept and full production?

#### Assistance

If you need additional product selection help, contact Advantech B+B SmartWorx technical support online.

*Embedded Wi-Fi routers and bridges handle the full network stack, making it fast and easy to integrate secure, dual-band WiFi into any product with no need for deep networking or Wi-Fi experience.*

### Wi-Fi Ethernet Bridges, Routers, Serial Device Servers and Access Points

- Plug-and-play serial and Ethernet to 802.11a/b/g/n connectivity
- Enterprise Class Wireless Security – WPA2/WPA-Enterprise, WPA2 WPAPreShared Key, WEP, Open, EAP, 802.11i
- AirborneM2M Management Center™ – device discovery, control, management
- AirborneM2M SpeedLink™ Roaming – enhanced connection reliability
- Airborne Portflex™ Technology – advanced port configuration and routing
- Wide operating temperature ranges
- Variable 5-36 VDC power supply
- Compact form factor in rugged metal box

### Embedded Wi-Fi Modules - OEM applications

- AirborneM2M Management Center™ - device discovery, control, management
- Enterprise Class wireless security (WPA2/WPA-Enterprise, WPA2/WPAPreShared Key, WEP, Open, EAP, 802.11i)
- 32-bit ARM9 processor with 802.11a/b/g/n radio for increased range and throughput
- Wide operating temperature ranges
- Advanced low power modes for power save applications

### 802.11a/b/g/n Evaluation/Design Kit








- Model# BB-WLNN-EK-DP551

This convenient kit (sold separately) aids developers with module/s.  
Contents: AirborneM2M Management Center CD, power supply, antenna and cables.



# AIRBORNE M2M WI-FI WIRELESS

PRODUCT SELECTION GUIDE (continued)

CATEGORY:	INDUSTRIAL (metal panel mount)			ENTERPRISE (compact enclosure, saddle holster)		OEM & MODULES (open board)	OEM & MODULES (carrier board)
	Bridge & Router	Serial Server	Access Point	Bridges & Routers	Serial Server	Interfaces (UART, SPI), Ethernet Adapter, RS232/422/485 Driver Control	Serial Server, Access Point, Client Module UART, SPI, RS-232/422/485
PRODUCT TYPE:							
Wireless Technology	IEEE 802.11 a/b/g/n, Wi-Fi	IEEE 802.11 a/b/g/n, Wi-Fi	IEEE 802.11 a/b/g/n, Wi-Fi	IEEE 802.11 a/b/g/n, Wi-Fi	IEEE 802.11 a/b/g/n, Wi-Fi	IEEE 802.11 a/b/g/n, Wi-Fi	IEEE 802.11 a/b/g/n, Wi-Fi
RS-232/422/485 port/s	(2) RS-232/422/485 (232/422 4-wire or 485 2-wire)	(2) RS-232/422/485 (232/422 4-wire or 485 2-wire)	(2) RS-232/422/485 (232/422 4-wire or 485 2-wire)	-	-	UART w/ Serial Driver Control (# WLNN-SE-DP551)	UART w/ Serial Driver Control
Ethernet port/s	(1) 10/100 Mbps	(1) 10/100 Mbps	Bridge: (1) 10/100 Mbps Router: NAT3	(1) 10/100 Mbps	(1) 10/100 Mbps	10/100 Mbps (# WLNN-ER-DP551)	10/100 Mbps
Interfaces	-	-	-	-	-	SPI/1-bit/8 MHz (# WLNN-SL-DP551) 10/100 Ethernet (# WLNN-ER-DP551)	SPI/1-bit/8 MHz, 10/100 Ethernet
Data Transfer Rate 802.11x, Mbps	Up to 65 Mbps (depending on WiFi channel)	Up to 65 Mbps (depending on WiFi channel)	Up to 65 Mbps (depending on WiFi channel)	Up to 65 Mbps (depending on WiFi channel)	Up to 65 Mbps (depending on WiFi channel)	Up to 54 Mbps (depending on WiFi channel)	Up to 54 Mbps (depending on WiFi channel)
Frequency Range/Dual Band WiFi	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 - 5.0 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz	2.4 GHz, 5 GHz
Enterprise Class Security	801.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other	801.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other	801.11i, WPA2 (AES-CCMP), EAP, LEAP, SSH, SSL, other	801.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other	801.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other	801.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other	801.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other
Encrypted Configuration	✓	✓	✓	✓	✓	✓	✓
Username / Password	✓	✓	✓	✓	✓	✓	✓
Network Protocols	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING, HTTP, FTP	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING, HTTP, FTP	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING, HTTP, FTP	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING	TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING (# BB-APXN-DP553: HTTP, FTP)
AirborneM2M Management Center	✓	✓	✓	✓	✓	✓	✓
AirborneM2M SpeedLink Roaming	-	✓	✓	✓	✓	✓	✓
Command Line Interface (ASCII)	✓	✓	✓	✓	✓	✓	# BB-ABDN-ER-DP553
Operating Temperature Range	-40 to +85 °C	-40 to +85 °C	-40 to +85 °C	-20 to +85 °C	-20 to +85 °C	-40 to +85 °C	-20 to +80 °C (# BB-ABDN-DP553) -20 to +85 °C (# BB-APXN-DP553)
Antenna Type	RP-SMA omni-directional, 2dBi, 2.4 & 5 GHz	RP-SMA omni-directional, 2dBi, 2.4 & 5 GHz	RP-SMA omni-directional, 2dBi, 2.4 & 5 GHz	Integrated RP-SMA omni-directional, 2dBi, 2.4 & 5 GHz	Integrated RP-SMA omni-directional, 2dBi, 2.4 & 5 GHz	(2) UFL Coaxial, 50 Ohm Maximum Gain: 5GHz = 5.5 dBi, 2.4 GHz = 4.1 dBi  RPSMA omni, 2dBi, 2.4 & 5 GHz	(2) UFL Coaxial, 50 Ohm Max. Gain: 5GHz = 5.5 dBi; 2.4 GHz = 4.1 dBi) (# BB-APMN-Q551)  RPSMA omni, 2dBi, 2.4 & 5 GHz (# BB-ABDN-xx-DP553, BB-APXN-DP553)
Enclosure	Metal	Metal	Metal	Plastic	Plastic	(Open board design)	(Carrier open board design)
Mounting	Panel mount, optional DIN rail brackets	Panel mount, optional DIN rail brackets	Panel mount, optional DIN rail brackets	Desktop, wall mount	Desktop, wall mount	(OEM module)	(OEM module)
Dimensions	12.1 x 12.0 x 2.9 cm (4.9 x 4.7 x 1.2 in)	12.1 x 12.0 x 2.9 cm (4.9 x 4.7 x 1.2 in)	12.01 x 12.01 x 2.92 cm (4.9 x 4.7 x 1.2 in)	6.1 x 9.9 x 3.2 cm (2.4 x 3.9 x 1.2 in)	6.1 x 9.9 x 3.2 cm (2.4 x 3.9 x 1.25 in)	(see model datasheet)	(see model datasheet)
MODELS:	<b>BB-ABDN-ER-IN5010</b>	<b>BB-ABDN-SE-IN5410</b>	<b>BB-APXN-Q5420</b>	<b>BB-ABDN-ER-DP551</b>	<b>BB-ABDN-SE-DP551</b>	<b>BB-WLNN-AN-DP551</b> (UART interface)	<b>BB-ABDN-ER-DP553</b> (serial server)
		<b>BB-ABDN-SE-IN5420</b>		<b>BB-ABDN-ER-DP551U</b>		<b>BB-WLNN-ER-DP551</b> (Ethernet adapter)	<b>BB-ABDN-SE-DP553</b> (access point)
						<b>BB-WLNN-SE-DP551</b> (232/422/485 driver control)	<b>BB-APMN-Q551</b> (access point/client module: UART, SPI, 232/422/485)
						<b>BB-WLNN-SP-DP551</b> (SPI interface)	<b>BB-APXN-DP553</b> (access point)
						<b>BB-WLNN-EK-DP551</b> (design / development kit)	