

Airborne M2M™ Wi-Fi Wireless

Industrial | Enterprise | OEM



- ✓ Bridges & Routers
- ✓ Serial Servers
- ✓ Access Points
- ✓ OEM Modules



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Enabling an Intelligent Planet

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Dual-band Wi-Fi Networking

with AirborneM2M™ IEEE 802.11a/b/g/n devices

Ensure successful connectivity of dual-band Wi-Fi devices with Advantech's wireless access points, Ethernet bridges, routers and serial servers. Whether you need a Wi-Fi access point to connect wireless LAN users to a wired network and to each other, or a Wi-Fi Ethernet bridge/router to connect a wired device to a wireless network, Advantech has a wide range of solutions for all your industrial applications.

AirborneM2M boxed and module products deliver RF technology, networking stacks, advanced security, transmit power and receive sensitivity and meet wide temperature and shock/vibration specifications of demanding M2M industrial applications. For OEM applications, rugged dual-band modules are an outstanding choice for reducing integration costs and providing quick time-to-market. Backwards compatible with previous generations, too.

Applications

- Machine to Machine (M2M)
- Industrial Automation & Control
- Energy Management
- First Responders
- Medical Devices
- Retail & POS
- Vehicle Telematics
- Material Handling & Logistics
- Test & Measurement
- Mining

Custom Configuration Service

Advantech offers pre-configuration services for the AirborneM2M product line including factory programming with your specific configuration along with a custom part number for easy ordering and shipping. It can save time and allow faster field deployment when your products arrive preconfigured and ready to go.

Advantech also offers a design/development kit for its open board OEM modules for quick time-to-market and reduced integration cost.

For more information about these and other modifications, please contact your Advantech sales representative.

Wireless Technologies Support

Advantech's world-class technical support is available around the globe – online, on the phone and in the field. Our technical support experts are dedicated to helping you re-envision, re-scope and re-structure your data communication applications.

Whether you have a simple question, a complex project installation question or an “outside-the-box” problem, the Advantech technical support team is standing by to provide assistance.



Test & Measurement



Energy Management



Retail / PoS / ATM



Mining Fleets



Factory Automation



First Responders

INDUSTRIAL

Ethernet Bridges/Routers Serial Device Servers Access Points

- Plug&play RS-232/422/485 and 10/100 Ethernet (NAT3 router) to IEEE 802.11a/b/g/n, Wi-Fi compliant
- 2.4 and 5 GHz dual band (RP-SMA omni-directional 2 dBi antenna, included)
- Up to 65 Mbps data transfer rate (Wi-Fi channel dependent)
- -40 to +85 °C wide operating temperature range
- LED Indicators: Power, Link, COMM, POST (power on self test)
- Network protocols – TCP/IP, ARP, ICMP, DHCP, DHS, UDAP, TFTP, UDP, PING, HTTP, FTP
- 5-36 Vdc power (TB or DC jack) (sold separately)
- Advanced Enterprise wireless security
- Encrypted configuration and UN/PW
- Command Line Interface (ASCII)
- Airborne Management Center
- Rugged IP30 metal box, panel mount (DIN rail mounting brackets, optional, sold separately)
- FCC, CE



Industrial Bridge/Router

- Bridges connect separate networks, or devices on separate networks, via MAC address
- Routers route data traffic between two or more LAN/WAN networks via software-configured address
- Two serial ports; one Ethernet port
- Advanced Enterprise Security – 802.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other



Industrial Serial Device Servers

- Routes serial RS-232/422/485 devices and data to Ethernet
- One or two serial ports; one Ethernet port (by model)
- Advanced Enterprise Security – 802.11i, WPA2, EAP, LEAP, WEP, SSH, SSL, other



Industrial Access Point/Client

- Connects to network via Ethernet cable creating wireless coverage to add wireless devices/clients (ie “wireless hub”)
- Supports up to 9 clients per access point
- Two serial ports; one Ethernet port (router or bridge mode)
- 2 kV serial ESD surge suppression
- Advanced Enterprise Security – 802.11i, WPA2 (AES-CCMP), EAP, LEAP, SSH, SSL, other

ENTERPRISE

_Ethernet Bridges/Routers

_Serial Device Servers

- 10/100 Ethernet to 802.11a/b/g/n Wi-Fi
- 2.4 and 5 GHz dual band (Integrated RP-SMA omnidirectional 2 dBi antenna, included)
- Up to 65 Mbps data transfer rate (Wi-Fi channel dependent)
- -20 to +85 °C operating temperature
- LED Indicators: Power, Link, COMM
- Network protocols – TCP/IP, ARP, ICMP, DHCP, DNS, UDP, TFTP, UDP, PING
- 5 Vdc power input
- Advanced Enterprise wireless security
- Encrypted configuration and UN/PW
- Command-Line interface (ASCII)
- Airborne Management Center
- Compact nylon plastic enclosure, desktop or panel mount
- FCC, CE



Enterprise Bridges/Routers

- Bridges connect separate networks, or devices on separate networks, as needed, via MAC address
- Routers route data traffic between two or more LAN/WAN networks via software-configured address
- RJ45 connector
- 5 Vdc (via AC or USB port, by model)
- Advanced Enterprise Security – 802.11i, WPA/2, EAP, LEAP, WEP, SSH, SSL, other



Enterprise Serial Server

- Routes serial RS-232/422/485 devices and data to Ethernet
- DB9 male connector
- 5 Vdc (via AC port)
- Advanced Enterprise Security – 802.11i, WPA/2, EAP, LEAP, WEP, SSH, SSL, other

OEM EMBEDDED MODULES

- _Open Board Modules
- _Carrier Boards
- _Design/Development Kit

Open board design is ideal for OEMs when space is limited, an enclosure is not needed, integrating into other assemblies – all with quick time-to-market and reduced integration costs.

- RS-232/422/485 serial or 10/100 Ethernet to 802.11a/b/g/n Wi-Fi
- 2.4 and 5 GHz dual band (RP-SMA omni-directional 2 dBi antenna/s)
- Up to 65 Mbps data transfer rate (by model, WiFi channel dependent)
- Advanced Enterprise wireless security – 802.11i, WPA/2, EAP, LEAP, WEP, SSH, SSL, other
- Airborne Management Center
- Airborne Power Save firmware – reduces power consumption, extends battery life in mobile devices
- FCC, CE



802.11a/b/g/n Evaluation Design & Development Kit

- Convenient, portable kit aids developers with OEM module/s
- Observe, configure, test, evaluate AirborneM2M modules
- Access module interfaces or change device function – router, bridge, access point, serial device server
- Includes the following:
 - (1) BB-WLNN-EK-DP551 module (mounted to EVB)
 - (1) 5 Vdc 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
 - (1) Cat5 Ethernet cable
 - (1) Quick Start Guide
- Optional powering: (4) AA 1.5V batteries, not included.



Open Board Modules

- UART interface, Ethernet router/adaptor, serial device server driver control, SPI interface options
- Wide operating temperature range: -40 to +85 °C
- TCP/IP, ARP, ICMP, DHCP, DNS, UDAP, TFTP, UDP, PING
- Command Line Interface (ASCII)



Embedded OEM & Carrier Boards

- Serial server, access point/client (UART, SPI, serial) options
- Carrier boards: Ethernet or serial port (by model), antenna connector, power connector, power pad option
- Wide operating temperature ranges (by model)
- TCP/IP, ARP, ICMP, DHCP, DNS, UDAP, TFTP, UDP, PING (HTTP, FTP by model)
- Command Line Interface (ASCII) (by model)

Success Stories



Mobile Wi-Fi in Healthcare

Wi-Fi Ethernet Bridge/Router

- 10/100 Mbps to 802.11a/b/g/n
- Dual-band (2.4 GHz, 5 GHz)
- Wide operating temperature: -20 to +85 °C
- Compact size (6.1 x 9.9 x 3.2 cm)
- 5 Vdc external power
- Advanced Enterprise Class wireless security (WPA2-Enterprise, WPA, WEP, EAP)
- OEM open-board version available

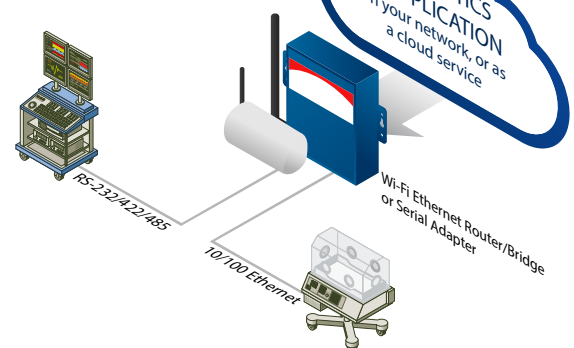
Challenge & Solution

Implementing Wi-Fi mobile medical devices has been a boon for the healthcare industry, improving patient care and solving network constraints. Yet, these benefits hinge on one major factor: maintaining reliable and secure Wi-Fi network connections. Signals from patient and visitor personal devices can saturate the license-free 2.4 GHz band leading to poor connections, timeouts and data retries. How can we prevent saturation from crushing a network for those who rely on it?

Dual-band Wi-Fi is the answer. There is no interference from other devices typically encountered in a medical setting.

AirborneM2M™ series Model BB-ABDN-ER-DP551, dual-band Wi-Fi Ethernet bridge/router from Advantech, connects equipment to networks via the 2.4 GHz and 5 GHz license-free bands. Users can switch between the two frequencies for the best wireless connection.

Wi-Fi for ETHERNET or SERIAL DEVICES





Wi-Fi Forklift Fleet Connectivity



Wi-Fi Embedded Open Board Module

- 10/100 Mbps to 802.11a/b/g/n
- Dual-band (2.4 GHz, 5 GHz)
- UART interface
- Wide operating temperature: -40 ~ +85 °C
- Low-power consumption
- Advanced Enterprise Class wireless security (WPA2-Enterprise, WPA, WEP, EAP, SSH)
- Compact, open board – suitable for OEMs

Challenge & Solution

Owners of large warehouses have discovered that equipping their forklift fleets with mobile wireless communication provides great advantages:

- Central control can ensure that only authorized operators are using the equipment.
- Collisions and accidents can be reduced.
- Processes like checklist inspection can be automated.

Advantech helped one of their customers with an embedded telematics solution for forklifts that could provide high mobility while supplying excellent range and bandwidth.

The solution used Model **BB-WLNN-AN-DP551**. The device connects forklifts to networks via either the 2.4 GHz and 5 GHz license-free bands. When the 2.4 GHz band is overcrowded, the device can operate at 5 GHz instead.

Mobile Wi-Fi WAREHOUSE FORKLIFTS



Regional Service & Customization Centers

China	Kunshan 86-512-5777-5666	Taiwan	Taipei 886-2-2792-7818	Netherlands	Eindhoven 31-40-267-7000	Poland	Warsaw 00800-2426-8080	USA	Milpitas, CA 1-408-519-3898
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