

# Dual Band (2.4 GHz, 5 GHz) Wi-Fi Ethernet Bridge/Router, Serial Server

AirborneM2M™ Industrial ABDN-xx-IN50xx Series

**B+B SMARTWORX**

Powered by

**ADVANTECH**

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## PRODUCT FEATURES

- RS-232/422/485 or 10/100 Mbps Ethernet to 802.11a/b/g/n (2.4, 5 GHz)
- Advanced Enterprise class wireless security
- One or two serial ports, one Ethernet port
- Wide operating temperature: -40 to +85 °C
- PoE 802.3af Power-over-Ethernet (Model BB-ABDN-ER-IN5018 = "PD")
- 5-36 VDC variable DC power supply (USA cord included; other cords sold separately)

AirborneM2M™ Industrial Wireless Device Serial Servers and Ethernet Bridge/Routers are built for networking equipment in a wide array of machine-to-machine (M2M) applications. AirborneM2M industrial series features industrial strength packaging and supports a wide temperature rating (-40 to +85 °C) to withstand challenging M2M environments. Available in both single and dual serial port models or a single Ethernet port model.

### Dual-Band Wi-Fi

These AirborneM2M products establish wireless connections over both 2.4 GHz and 5 GHz bands. Whenever the 2.4 GHz airspace is overcrowded with competing wireless transmission, AirborneM2M products can be switched over to 5 GHz band to keep data flowing.

### Powering Options

- External 5-36 VDC power source required. USA power cord included, other cords sold separately.
- Power-over-Ethernet (PoE) 802.3af, Powered Device (PD) (select models)

## ORDERING INFORMATION

| MODEL NUMBER      | DESCRIPTION  | POE<br>POWER-OVER-ETHERNET |
|-------------------|--|----------------------------|
| BB-ABDN-ER-IN5010 | Ethernet Bridge/Router – Industrial Wireless, Dual Band (2.4 / 5 GHz)                        | no                         |
| BB-ABDN-ER-IN5018 | Ethernet Bridge/Router, PoE (PD) – Industrial Wireless, Dual Band (2.4 / 5 GHz)              | YES (PD)                   |
| BB-ABDN-SE-IN5410 | Serial Server – Industrial Wireless, Dual Band (2.4 / 5 GHz) - with one RS-232/422/485 port  | no                         |
| BB-ABDN-SE-IN5420 | Serial Server – Industrial Wireless, Dual Band (2.4 / 5 GHz) - with two RS-232/422/485 ports | no                         |

Available in: North America, European Union (EU), Japan

## ACCESSORIES - sold separately

BB-PS-WDS – 120-240 VAC, 50/60 Hz, 5 VDC, 2A barrel connector power supply  
(Note: includes USA cord; other cords sold separately.)

BB-MDR-20-24 – 120-240 VAC, 50/60 Hz, 24 VDC, 1.0A DIN rail power supply

BB-ACH2-DBAT-DP002 – 2dBi portable (rubber duck) 2.4GHz / 5GHz antenna

All product specifications are subject to change without notice.

ABDN-er-se-IN50xx\_EthBridgeRouter-SerSvr\_4518ds

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## SPECIFICATIONS

| TECHNOLOGY                       |  |
|----------------------------------|--|
| Wireless Technology              | IEEE 802.11 a/b/g/n, Wi-Fi Compliant   |
| Wired Interface                  | 2 ports, RS-232/422/485, (RS-232/422 4-wire or RS-485 2-wire)<br>10/100 Ethernet port (Bridge, Router (NAT3) Modes)<br>Software selectable   |
| Frequency                        | 2.4~2.4835 GHz (US/Canada/Europe)<br>2.4~2.497 GHz (Japan)<br>5.150 ~ 5.350 GHz<br>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  |
|                                  | US/Canada: 11 Channels 802.11b/g<br>13 Channels 802.11a<br>Europe: 13 Channels 802.11b/g<br>19 Channels 802.11a<br>France: 4 Channels 802.11b/g<br>Japan: 14 Channels 802.11b<br>13 Channels 802.11g<br>23 Channels 802.11a  |
| Wireless Data Rates              | 802.11a/g = 54, 48, 36, 24, 18, 12, 9, 6 Mbps<br>802.11b = 11, 5.5, 2, 1 Mbps<br>802.11n = 65, 58.5, 42, 39, 26, 19.5, 13, 6.5 Mbps  |
| Network Protocols                | TCP/IP, ARP, ICMP, DHCP, DNS, UDAP, TFTP, UDP, PING, HTTP, FTP   |
| Receive Sensitivity – 802.11 b/g | 54Mb/s = -72 dBm<br>36Mb/s = -78 dBm<br>18Mb/s = -84 dBm<br>6Mb/s = -89 dBm<br>11Mb/s = -86 dBm<br>1Mb/s = -92 dBm   |
| Receive Sensitivity – 802.11 a   | 54Mb/s = -74 dBm<br>36Mb/s = -80 dBm<br>6Mb/s = -90 dBm  |
| Wireless Security                | - Open, WEP 64 & 128 bit, WPA-PSK (TKIP), WPA2-PSK (AES), 802.1x (EAP), WPA-Enterprise, WPA2-Enterprise, EAP-TLS/MSCHAPv2, EAP-TTLS/MSCHAPv2, EAP-TTLS (MD5), EAP-PEAPv0/MSCHAPv2, LEAP<br>- Zero host security footprint<br>- Advanced certificate storage and management |
| Secure Communications            | SSH and SSL tunneling.<br>Encrypted configuration.   |
| Transmit Power                   | 802.11b = 15 dBm (31.6mW)<br>802.11g = 12.6dBm (18.12mW)<br>802.11a = 17 dBm (50.1mW)  |

| POWER                             |   |
|-----------------------------------|---|
| Input Voltage                     | 5-36VDC +/-5%, 500mA (maximum)  |
| Power Connection                  | 2-position terminal block, 2.1mm barrel jack  |
| Power Use                         | 2.5W at 5VDC  |
| Supply In-rush Current            | 3000 mA (maximum) for 20ms  |
| Source (all models)               | External, required (USA cord included, other cords sold separately)   |
| PoE "PD" (select model)           | Power-over-Ethernet, using a 802.3af Class 1 (Model# BB-ABDN-ER-IN5018 only)  |
| LED INDICATORS                    |   |
| 4 LEDs                            | COMM, LINK, POWER, POST (Power on Self Test)  |
| ENVIRONMENTAL                     |   |
| Operating Temperature             | -40 to +85 °C   |
| Storage Temperature               | -40 to +85 °C   |
| Operating Humidity                | 5 to 95% (non-condensing)   |
| MECHANICAL                        |   |
| Antenna                           | RP-SMA Omni-directional 5.5 dBi 2.4GHz / 5GHz Antenna   |
| Enclosure                         | Metal enclosure   |
| Mounting                          | Panel mount, optional DIN rail brackets   |
| Dimensions                        | 12.1 x 12.0 x 2.9 cm (4.9 x 4.7 x 1.2 in)   |
| MEANTIME BETWEEN FAILURES (MTBF)  |   |
| MTBF                              | BB-ABDN-ER-IN5010 = 392467 hours<br>BB-ABDN-ER-IN5018 = 377995 hours<br>BB-ABDN-SE-IN5410 = 360740 hours<br>BB-ABDN-SE-IN5420 = 350412 hours  |
| MTBF Calc. Method                 | MIL 217F (Parts Count Reliability Prediction)   |
| APPROVALS, DIRECTIVES & STANDARDS |   |
| North America                     | FCC Title 47 Part 15 Class B Sub C Intentional Radiator   |
| CE - Directives (Europe)          | 2014/35/EU - Low Voltage Directive<br>2014/53/EU - Radio Equipment Directive (RED)<br>Hereby, Advantech B+B SmartWorx declares that the radio equipment type Wi-Fi Ethernet Bridge/Router or Serial Server is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: <a href="http://www.advantech-bb.com">www.advantech-bb.com</a><br>2011/65/EU - Reduction of Hazardous Substances Directive (RoHS)<br>2012/19/EU - Waste Electrical & Electronic Equipment Directive (WEEE)   |
| CE - Standards (Europe)           | <b>EMC:</b><br>ETSI EN 300 328 v2.1.1 - EMC & Radio Spectrum Matters (ERM) Wideband Transmission Systems - 2.4 GHz ISM Band<br>ETSI EN 301 893 v1.8.5 - EMC & Radio Spectrum Matters (ERM) Wideband Transmission Systems - 5 GHz ISM Band<br>ETSI EN 301 489-1 v2.1.1 - Applied in accordance with the specific requirements of:<br>ETSI EN 301 489-17 v3.1.1 - EMC & Radio Spectrum Matters (ERM) Broadband Data Systems<br>EN 55032+AC, Class A - Information Technology Equipment (ITE) - RF Emissions<br>EN 55024 - Information Technology Equipment (ITE) - Immunity Characteristics - Limits and Methods of Measurement<br><br><b>Safety:</b><br>EN 60950-1 + A1 + A11 + A12 + A2 - Information Technology Equipment (ITE) - Safety - Part 1 - General Requirements<br><br><b>RF Exposure:</b><br>EN 62311 - Assessment of electronic and electrical equipment related to human exposure restrictions for EM fields (0 Hz to 300 GHz) |